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LIST OF MEMBERS OF THE COMMITTEE

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LEAGUE OF NATIONS

HEALTH COMMITTEE

MINUTES OF THE FIFTH SESSION

HELD AT GENEVA, JANUARY 8TH TO 13TH, 1923

LIST OF MEMBERS OF THE COMMITTEE

The following members of the Committee participated in the deliberations of the fifth session:

Professor Th. MADSEN, <i>Chairman.</i>	Director of the State Serum Institute, Copenhagen.
Sir George BUCHANAN, C. B., M.D., <i>Vice-Chairman.</i>	Senior Medical Officer of the Ministry of Health, London.
Professor Léon BERNARD,	Professor of Hygiene at the Faculty of Medicine of the University of Paris.
Dr. F. CAROZZI,	Head of the Industrial Health Section of the International Labour Office.
Dr. H. CARRIÈRE,	Director of the Federal Health Department, Berne.
Dr. CHODZKO,	Minister of Public Health, Warsaw.
M. KUSAMA (substitute for Dr. MIYAJIMA),	of the Kitasato Institute for Infectious Diseases, Tokio; Professor of the Medical College, Keio University, Tokio.
Dr. LUTRARIO,	Director-General of the Health Department at the Ministry of the Interior, Rome.
Professor B. NOCHT,	of the Institute of Tropical Diseases, Hamburg.
Professor Dr. SANTOLIVIDO,	Adviser on Matters of International Health to the League of Red Cross Societies.
M. O. VELGHE,	Director-General of the Health Department at the Ministry of the Interior and of Health, Brussels.

Dr. RAJCHMAN, the Medical Director, acted as Secretary of the Committee.

Absent: Dr. Josephine BAKER,
Professor CALMETTE,
Dr. Carlos CHAGAS,
Sir Havelock CHARLES, G. C. V. O.,
Dr. Angel PULIDO.

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AGENDA.

Ch. Sec.

Approved by the Committee January 8th, 1923.

1. Report on the work of the Health Organisation since August 1922.
Rapporteur: Medical Director.
2. Report on the two Serological Conferences.
Rapporteur: Prof. Th. Madsen.
3. Report on the Conference of Medical Officers of Health participating in the first experiment in interchange of public health personnel.
Rapporteur: M. Velghe.
4. Report on the work of the Epidemic Commission.
Rapporteur: Sir George Buchanan.
5. Report of the Waterways Sub-Committee.
Rapporteur: Dr. Chodzko.
6. Report of the Near East Sub-Committee.
Rapporteur: Sir George Buchanan.
7. Report of the Far East Sub-Committee.
Rapporteur: Professor Calmette.
8. Report of the Joint Opium Sub-Committee.
Rapporteur: Dr. Carrière.
9. Service of Epidemiological Intelligence and Public Health Statistics.
10. Report on the Standardisation of Biological Products by H. Dr H. Dale.
11. Miscellaneous:
 - (a) Appointment of a representative of the United States Public Health Service as member of the Health Committee.
 - (b) Collaboration with the International Sanitary Bureau at Washington.
 - (c) Museum of Hygiene at Dresden.

FIRST MEETING

Held on January 8th, 1923, at 3 p.m.

1. Opening of the Session.

The CHAIRMAN, declaring the meeting to be open, welcomed the members of the Committee and greeted Professor Nocht on behalf of the Committee.

He regretted the absence from the Committee of Dr. Calmette, Dr. Pulido, Sir Havelock Charles and Dr. Chagas, who had begged to be excused. M. Miyajima was replaced by M. Kusama.

He informed the Committee that Dr. Josephine Baker was prevented, for reasons of health, from assisting in the work of the Committee, and proposed to address to her the good wishes of the Committee for her recovery and to express the hope that she would take part in the next session.

This proposal was adopted.

2. Collaboration between the Health Committee and the Public Health Service of the United States.

The CHAIRMAN reminded the Committee of the terms of the invitation which he had addressed to Surgeon-General Cumming, of the Public Department of Health at Washington (Annex 1). He informed the Committee that Surgeon-General Cumming had replied that he would be happy to sit on the Health Committee of the League in an advisory capacity.

The Committee, having taken cognisance of the correspondence between Prof. Madsen and Surgeon-General Cumming, decided:

(a) To express its sense of the desirability of its work being associated with that of the Public Health Service of the United States;

(b) To communicate the correspondence in question to the Council for such action as it may desire.

3. Collaboration between the Health Committee and the People's Commissariat for Public Health at Moscow.

The CHAIRMAN reminded the Committee that the Epidemic Commission had concluded an arrangement at Genoa with the representatives of the Russian Government, which guaranteed to the agents of the Commission the immunities and privileges necessary for their work and assured them of the assistance of the Soviet authorities. This arrangement provided that the Epidemic Commission should be considered for its work in Russia as the executive organ of an international commission composed of the Health Committee of the League of Nations and a representative of the People's Commissariat for Public Health. The meeting of the Health Committee in August 1922 provided an opportunity for convening the International Commission in accordance with this arrangement. The Health Commissariat at Moscow only replied, however, to the notification addressed to it after the August session of 1922. The Commissariat had been informed that the next session would take place in January 1923. Dr. Siemashko, Commissary of the People for Public Health, had come to Geneva in order to discuss the question of the epidemics in Russia, and the Chairman proposed that he should assist at the meetings which discussed questions concerning Russia in regard to which the information at his disposal might be valuable.

Sir George BUCHANAN drew the attention of the Committee to the danger of creating a precedent. It must not be supposed that any Minister of Public Health who happened to be staying in Geneva should regard himself as having a right to be present at the meetings of the Committee to discuss questions of interest to his country.

Dr. RAJCHMAN, in order to explain the character of the invitation addressed to Dr. Siemashko, read the telegram which he had sent to Dr. Siemashko with the authority of the Chairman. He reminded the Committee that Dr. Siemashko might ask for a meeting of the International Commission, of which the Epidemic Commission in Russia was the executive organ. He thought it would be useful to hear Dr. Siemashko on the situation in Russia.

Sir George BUCHANAN approved the proposal of the Chairman, subject to the reservation that, in order that future procedure might not be prejudiced, Dr. Siemashko should not be invited to the discussion of certain questions which should be dealt with solely by members of the Committee.

Following an exchange of views, in which Professor Léon BERNARD, M. VELGHE and the CHAIRMAN took part, *it was agreed* that the Committee was free at all times to invite strangers to be present in particular cases and when precise questions were under discussion.

The Committee decided to convene on the following day the International Commission, composed of the Health Committee and of the representative of the People's Commissariat for Public Health. (For minutes of the meetings of the International Commission see Annex 2.)

4. Centenary of Pasteur.

The CHAIRMAN informed the Committee that he had already, in the name of the Health Committee, on the occasion of the celebration at the Pasteur Institute on December 27th, sent a telegram to Dr. Roux and received a message of thanks for it.

On the proposal of the CHAIRMAN, the Committee proposed the following resolution:

"The Health Committee, conscious that its technical activity is deeply rooted in the work of Pasteur, and convinced that the ideas of Pasteur harmonise in their humanitarian character with the spirit which inspires the League of Nations and in which the League of Nations was constituted, suggests to the Council that the League of Nations should associate itself, by some means to be hereafter determined, with the tributes paid on the occasion of Pasteur's centenary by all the nations of the world to the memory of the great scientist and benefactor of humanity.

This resolution was unanimously adopted.

5. Report of the Medical Director.

The CHAIRMAN invited the Medical Director to present his report to the Committee. He suggested that, after the report had been presented, the Committee should proceed with a general discussion and subsequently take the report in detail. Certain sections of the report might be discussed at once, but the sections on which special reports would be presented to the Committee might be conveniently postponed.

Dr. RAJCHMAN presented his report (Annex 3).

The CHAIRMAN thanked Dr. Rajchman for his report and invited a general discussion.

M. VELGHE doubted whether it was advisable to start a general discussion immediately. There were, however, special points which might be taken at once. As one who had been present at the discussions of the Second Committee of the Third Assembly he would like to assure the Committee that the most favourable views had been entertained by the Assembly regarding the work of the Health Organisation. All the criticism raised had been due to financial considerations and had not been aimed at the Health Organisation in particular. It had been due to a general wish to cut down expenditure. The Committee might continue its work with confidence pending a settlement of the financial problem.

Sir George BUCHANAN suggested that the order of the discussion of the report should be fixed. He thought it would be useful to have a discussion on each of the separate sections of the report on which no special report would be made to the Committee. The Committee might take in turn the section on the resolutions of the Council, the section on the decisions of the Assembly, the section on the agreement of the Rockefeller Foundation, and the section on tropical diseases. None of these questions had been put separately on the agenda.

The CHAIRMAN thought that the report should be finally discussed at a later meeting.

This proposition was approved.

6. The Question of Publicity.

After an exchange of views it was decided that the occasion did not yet present itself for holding a meeting in public.

SECOND MEETING

Held on January 9th, 1923 at 3.30 p.m.

7. Report of the Medical Director.

The CHAIRMAN invited discussion on the sections of the report on which no special report would be made to the Committee.

SECTION 1: *the Resolutions of the Council.*

Sir George BUCHANAN, referring to paragraph (b) of the above section, suggested that the second sentence should be redrafted. The Council had accepted the principle that a general information service might usefully be organised by the Health Organisation. The sentence as drafted was too imperative in form.

Referring to paragraph (c) of the same section, he pointed out that the Health Committee had itself stipulated that the credit referred to should be used for the collection of information on the spread of epidemics. He asked that the last sentence of the paragraph should be amended accordingly.

These proposals were accepted.

SECTION 2: *Decisions of the Third Assembly.*

Sir George BUCHANAN, referring to the paragraph concerning the European Health Conference at Warsaw, suggested that the text of the resolution passed by the Assembly should be quoted *in extenso*.

The proposal was adopted.

Sir George BUCHANAN, referring to the paragraph concerning the constitution of the Permanent Health Organisation, again suggested that it would be advisable to quote the resolution of the Assembly textually. The text of the Assembly's resolution implied that the Committee would have more time and latitude in this matter than was indicated in the condensed version given in the report. He enquired what precisely was meant by the decision of the Assembly that the principles adopted by the First Assembly for the technical organisations of the League should be taken as a basis in constituting the Permanent Health Organisation. Was it necessary that the Health Organisation should have the same machinery as the other technical organisations, with a general conference and an expert committee and a section of the Secretariat constituted according to a stock pattern? How far might the Health Organisation be constituted with due regard to its own special duties and requirements?

Dr. RAJCHMAN explained that it was the wish of the Assembly that the Health Organisation should conform to the same general principles as the other technical organisations, for which there already existed a recognised tradition and practice. Liberty, however, remained as regards the details of the organisation. The technical organisations were not of an identical pattern. On the Opium Committee, for example, there were not only representatives of the Governments but three technical experts who sat as assessors.

M. VELGHE said that the Assembly had fully recognised that the existence of the Office international introduced an important special factor, which would have to be considered in constituting a Permanent Health Organisation. Attention had been drawn to the necessity of avoiding overlapping. There were many difficulties involved. He thought the Committee ought to be entrusted with the study of the question, as it was better qualified to deal with it than the Council of the League.

Prof. Léon BERNARD thought that it would be wise to proceed in this matter with the utmost discretion. Agreement would be difficult, and only possible with the goodwill of the parties. The question should not be hastily undertaken, and the Committee should not act unless called upon to do so.

M. VELGHE said that the Assembly had undoubtedly desired a settlement of the question, as it had contemplated the possibility that it might be settled before the next Assembly meeting, in September 23, and would be disappointed if no step were taken either by the Council or the

Committee. The Committee, if invited by the Council to take action, could at once take the subject into consideration, but should proceed with the utmost prudence and deliberation.

Sir George BUCHANAN pointed out that the resolution of the Assembly presupposed the meeting of an international health conference, which would assist in the constitution of the Permanent Organisation. No conference was likely to be held before the next Assembly, which could not, therefore, complain if a scheme for the Permanent Organisation was not ready.

The Permanent Health Organisation was, in his view, distinguished from other technical organisations of the League in that frequent general assemblies or conferences were absolutely essential. All the chief public health services ought to have an opportunity of serious meetings at least once or twice a year, as at present in the Office international d'hygiène publique. Without this, no small committee and no bureaucracy, however able, could really meet the practical needs of international health work.

The CHAIRMAN asked whether it would be for the International Health Conference mentioned in the Assembly resolution to constitute the Permanent Health Organisation.

Dr. RAJCHMAN said it would be the duty of the International Health Conference to elect the Permanent Health Committee. The Conference would meet for this purpose in the event of the Council having accepted a scheme for a permanent organisation framed by the Committee.

Sir George BUCHANAN said he agreed with the views of M. Velghe. The Committee should, of course, take up this question if invited to do so by the Council, but hurried solutions must at all costs be avoided.

Dr. CARRIÈRE said he had the impression that the Assembly had not been altogether satisfied with the way in which this subject had so far been handled. He thought that a definite step should be taken by the Committee as evidence of its goodwill in the matter. The Assembly had cut down the budget of the Health Organisation and had drawn attention to the danger of overlapping. He thought the Committee should take the initiative, though it should not proceed hastily.

M. VELGHE assured the Committee that there had been no idea in the Assembly of criticising the Health Committee for the way in which it had dealt with the matter.

It was agreed that the Committee was prepared, on the invitation of the Council, to undertake the preparation of the Permanent Health Organisation.

SECTION 3: *Agreement with the Rockefeller Foundation.*

Sir George BUCHANAN said that as the contribution made by the Rockefeller Foundation towards the maintenance of an epidemiological service was, except for book-keeping purposes, not now to be separated from the funds for that service which were provided by the League, it was important that the joint fund should in all respects be treated as a unit.

It was still necessary to be able to continue to consider this service as a whole, apart from other parts of the Health Organisation, when necessary, to have separate reports on this service, and to know what the service cost as a whole from year to year. This point was especially important, as the money provided by the Rockefeller Foundation was only certain for a limited period.

Dr. LUTRARIO emphasised the desirability of having separate accounts, but agreed that the fund should be employed as a common fund.

Dr. RAJCHMAN explained that the arrangement described in his report was based strictly upon the terms of the contract with the Rockefeller Foundation.

SECTION 4: *the Expert Committee on Tropical Diseases.*

(No amendment).

SECTION 9: *Courses for Public Health Personnel.*

Sir George BUCHANAN enquired from what source the £5,000 mentioned in the last paragraph of this section had been derived.

Dr. RAJCHMAN stated that the money had been found by the League of Red Cross Societies.

8. **Report on the Enquiry in the Far East.**

Sir George BUCHANAN presented the report of Dr. Calmette (Annex 4). In so doing he laid stress on the efforts made by members of the Sub-Committee, in pursuance of their instructions, to secure a full commission, and he regretted that, from circumstances noted in the report, their efforts in this direction had not been successful. He hoped, however, that it would be possible to send out a more extended mission at a later date and he drew attention to the statement in Dr. Calmette's report to this effect. The work of Dr. Norman White would doubtless enable a further study to be made of the important questions which he was at that moment investigating.

It had been suggested to the British Colonial Office by the authorities in Singapore that the League of Nations Health Committee should consider a resolution relating to beri-beri adopted at the Fourth Congress of the Far Eastern Association of Tropical Medicine, held at Batavia in August 1921. The suggestion appeared to be that a local international agreement might impose

a differential duty on different kinds of rice, in order to deter coolies from consuming the highly milled varieties. He would suggest that Dr. Norman White should be asked to investigate the matter and collect information as to the arrangement proposed.

It was agreed that Dr. Norman White should be instructed accordingly.

Mr. KUSAMA said he wished, on behalf of Dr. Miyajama, to express appreciation for the way in which the Committee had taken up the question of the mission to the Far East, and thanked the Sub-Committee and the Medical Director for their valuable work. Dr. Miyajama had anticipated that the mission would be a more extended one and agreed with Sir George Buchanan that a further enquiry should be organised later on. The Committee was to be congratulated on having secured for this mission the services of Dr. Norman White. Dr. Miyajima was now in Japan and would welcome the mission on its arrival.

9. Pneumonic Plague in Manchuria.

A letter was read from the Director of the Plague Prevention Service of Northern Manchuria protesting against the statement in the report of the Health Committee dated January 6th, 1922, regarding the prevalence of pneumonic plague in Manchuria and Siberia and inviting the Commission of the League to visit the stations at Harbin (Annex 5).

It was decided that this letter should be forwarded to Dr. Norman White.

10. Health Museum at Dresden.

Dr. RAJCHMAN presented to the Committee correspondence between the Director of the German Museum of Health at Dresden and the Chairman of the Health Committee. The Director of the Health Museum had asked whether it would be possible for the Chairman of the Health Committee to interest the Rockefeller Foundation in the work of the Museum, which was in need of assistance.

The Chairman of the Health Committee had assured the Director of the Museum that the Health Section of the League would be able to place an order amounting to £500 with the Museum provided its workshops could undertake to prepare models for the health courses organised by the section at Warsaw, Moscow and Kharkov. The Medical Director had also written to the representatives of the Rockefeller Foundation.

In answer to Sir George Buchanan, Dr. Rajchman said that the £500 would be supplied by the League of Red Cross Societies.

11. Proposed collaboration between the Health Section of the League and the International Sanitary Bureau at Washington.

Dr. RAJCHMAN read a letter which he had received from Dr. Rowe suggesting that a plan of co-operation should be drawn up (Annex 6).

Sir George BUCHANAN thought that the invitation to collaborate might be accepted in principle, but suggested that the nature of the collaboration should be considered by the sub-committee which was to discuss the organisation of epidemiological intelligence.

The Committee agreed that the invitation to co-operate be accepted in principle.

THIRD MEETING

Held on January 10th, 1923, at 11 a.m.

Present: All the members of the Committee together with Dr. SIEMASHKO, People's Commissary for Public Health at Moscow.

12. The Epidemiological Position in the Far East.

Professor SANTOLIVIDO said that the League of Red Cross Societies was of the opinion that the Conference of Red Cross Societies to be held at Bangkok afforded a valuable opportunity of drawing the attention of the National Red Cross Societies of the principal countries interested to the problem of epidemics in the Far East, and of inducing these societies to collaborate, within their available means and in an appropriate field, in the work undertaken by the League of Nations.

He presented a note on the epidemiological problems of the Far East prepared by the Secretariat of the League of Red Cross Societies for the Conference of the League at Bangkok.

13. Interchange of Health Personnel.

M. VELGHE presented his report (Annex 7). He said his report did not contain any personal expression of opinion. He had simply wished to indicate the opinion of those who had taken part in the first of the interchanges of health personnel. This opinion was unanimous, and for his part he agreed completely with the remarks and conclusions inspired by the first experiment. The interchange had been regarded by all as extremely useful. Everyone participating had shown the utmost zeal, although the programme had been heavy. The division of the programme into lectures, visits of inspection, and practical instruction had proved to be excellent, the lectures and inspections being a preparation for the period of practical instruction which was the essential part of the programme. It would be well to fix in advance the details of the programmes, so that each health administration might appoint officials most qualified to benefit from the experiment. According to circumstances, the health administrations might appoint specialists on tuberculosis, on the protection of infants, or in laboratory work. In considering the candidature of officials engaged upon general public health work, it was necessary to take account of the age of the official, his titles and qualifications. Such officials should be neither too young nor upon the eve of their retirement, but should enjoy a certain authority, so that their experience might be of practical service to their administrations.

The period of practical instruction was the most important part of the system. It allowed the officials to get into touch with the population of the country, to ascertain its needs, and to understand local customs and the legislation and health organisation of the country.

It was clear from the valuable experiments which had just been made that the system of interchanges should be continued even after the three years, during which the assistance of the Rockefeller Foundation was assured.

Dr. LUTRARIO furnished certain particulars on the interchange which had been organised in Italy from November 11th to December 16th, 1922 (Annex 8). Fourteen officials had taken part. A course of 35 days had been divided into four periods. There was a first period of ten days at Rome devoted to lectures, to visiting health constructions of antiquity, and new constructions such as the garden city, a sanatorium for tuberculosis, etc. During the second period, various establishments were visited at Naples and Ferrara. The period of practical instruction came next, during which small groups of two or three officials were sent to Milan, Turin, Genoa and Florence to participate in the work of the Italian officers of health. Finally, they had all met at Milan for a short while before separating.

The officials had shown themselves extremely amenable and zealous, but it was necessary to avoid in the future overloading them with work, and it would be well to cut down the number of lectures and theoretical instruction. It was also necessary as far as possible to prolong the period of interchange up to five or six weeks. Generally speaking, the results had been very satisfactory, and a very remarkable spirit of co-operation had arisen between the Italian and foreign officials.

Practical instruction should be given only in a single country in order that those participating might have the time thoroughly to understand the spirit of the country. The number of those participating should not exceed 20 or 25.

Dr. CHODZKO said that Poland had been happy to welcome four Italian health officials in November and December 1922. They had visited everything of interest at Warsaw. They had made visits of inspection in Eastern Poland during very inclement weather in order to study the campaign against epidemic diseases. On their return to Warsaw, lectures had been organised for their benefit on tuberculosis, alcoholism and venereal diseases, and the Italian officials had given a very interesting account of the health situation in Italy, particularly as regards malaria.

Finally, they had taken part in the activities of the various services of Warsaw and its neighbourhood. A tribute should be paid to their zeal and to their goodwill. He endorsed the conclusions of M. Velghe and Dr. Lutrario in regard to the system of interchanges, and said that the Polish officials had derived great benefit from their period of instruction abroad.

Dr. RAJCHMAN submitted to the Committee a draft budget. Taking the fiscal period as a whole, which began on October 1st, 1922 (the date on which the payment of the Rockefeller Foundation began), and extended to December 31st, 1923, the available credit amounted to 75,000 dollars plus 10,000 dollars (50,000 Swiss francs).

The sum available was, therefore	85,000 dollars
The first interchange in Belgium and Italy had cost	13,000 "
The interchange in England and Central Europe would cost	25,000 "
The interchange in the United States	25,000 "
The interchange of laboratory staff would cost	12,500 "
The study of malaria in Italy, in which 12 persons belonging to nine countries would engage for a period of six weeks, would cost	5,000 "

It would thus be possible to devote a sum of 4,000 dollars to eight or ten individual fellowships. The choice of the candidates was extremely difficult, for it was necessary to look at the matter both from the point of view of particular persons and of health organisations without forgetting that there would be no control over the persons holding the fellowships. Perhaps the best way was to proceed experimentally during the year 1923. A small committee, composed, for example, of the Chairman, the Vice-Chairman, one of the members of the Committee and the Medical Director, might take the first appointments.

The plan of interchange which would take place in England was different from that which had taken place in Belgium and Italy. After studying ten days in London, the officials would take a practical course of four weeks in the provinces in groups of five.

It was necessary to choose a country of Central Europe. Germany had asked that the interchange in Germany might be postponed. It would be better to accept at the moment the invitation of Austria, in order that the experiment might not be made simultaneously in two great industrial countries like England and Germany. If this proposal were adopted, a detailed plan might be prepared in two or three weeks. 27 officials would participate in this second experiment. The reply of eleven Governments had already been received, namely: Belgium, Finland, France, Greece, Italy, Russia, Norway, Poland, Sweden, the Kingdom of the Serbs, Croats and Slovenes, and Denmark. Replies were awaited from eight Governments.

It was necessary to wait for the next session in order to decide on the details of the interchange which was to take place in the United States. Negotiations were proceeding. No replies had as yet arrived from South America.

The interchange of laboratory staff should take place in two or three months or be postponed to a later period, October for example. Only State laboratories would be invited to appoint candidates. The Chairman and the Medical Director had drawn up the following list of States which would be invited: England, United States, Germany, Czechoslovakia, Austria, France, Poland, Russia, Denmark, the Kingdom of the Serbs, Croats and Slovenes, Italy, the Netherlands and Belgium.

The larger States would send two representatives. There would be altogether some 20 persons.

Dr. Lutrario had proposed the end of May as a date for the study of malaria. Representatives of nine countries particularly interested, comprising some twelve doctors, would take part. The countries were: Russia, Poland, the Kingdom of the Serbs, Croats and Slovenes, Greece, Bulgaria, the Netherlands, Italy, Spain, and finally Albania, for whom this question was vital.

If this programme were applied, more than 100 health officials would benefit from the system of interchange during the first fiscal period, including the officials who had taken part in the first experiment already completed.

Sir George BUCHANAN raised the question of travelling expenses from Europe to America. Travelling expenses, in his opinion, must be given to European officials participating.

Dr. RAJCHMAN explained that the question of travelling expenses had not yet been settled. The important point was that an interchange should be organised in America in conformity with the first resolution of the Assembly and with the desire expressed by the delegates of South America. As regards an interchange in the Far East, it would be well to await the return of Dr. Norman White.

Dr. SIEMASHKO thought that the first experiment had given excellent results. The system of interchange had a double character: administrative and scientific. In his opinion it was necessary

to develop the administrative side. The Russian Government was sending hundreds of doctors to study abroad.

He thought that the detailed programme of the courses should be known in advance in order that the health administrations might appoint officials qualified to benefit from them. These officials should not be too young.

In conclusion, he felt that the system of inspection and visits had a great practical importance.

Prof. Léon BERNARD said that experience had justified his expectations. The results of the interchange were excellent from the moral point of view, but it was evident that the instruction should be given as practical a character as possible.

If lectures, visits and inspections were to be a necessary preparation for practical instruction, it followed that practical instruction should only be given in the country where the lectures, visits and inspections had taken place. It seemed difficult in three months to become familiar with the customs and institutions of two countries.

Account must be taken of the distinction drawn by M. Velghe between health officials dealing with general questions of public health and those who were specialists. Candidatures for fellowships should be confined to specialists. France had perhaps not very much to teach foreign countries as regards general health organisation, but she was able, on the other hand, to offer many interesting achievements in certain particular fields, as, for example, in the campaign against tuberculosis.

The interchange of personnel must not be organised upon too rigid lines, but a certain elasticity must be permitted in order that the conditions peculiar to each country might be taken into account. It was necessary to insist, as Dr. Siemashko had said, on the administrative and practical character of the programme.

Interest in social health was considerably on the increase, and it might be said that the new spirit which insisted on the social character of health measures was gradually penetrating the universities of France.

The United States of America offered a magnificent example in this connection, and it was desirable that an interchange should be organised in that country to the great advantage of those who would participate in the experiment.

FOURTH MEETING

Held on January 11th, 1923, at 10.30 a.m.

Present: All the members present at the previous meeting together with Dr. SIEMASHKO, People's Commissary of Public Health at Moscow.

14. Interchange of Health Personnel (*continuation*).

Sir George BUCHANAN thought it would be premature to define the system of interchange too rigidly. At this stage a certain degree of elasticity was necessary, especially in regard to the character of the interchanges. He thought, for example, there was a danger that too much importance might be attached to the instruction of medical officers of health in the details of foreign health services. M. Velghe had insisted on the importance of careful selection of candidates appropriate to the particular course of collective interchange which is being undertaken. For this selection one must depend on the Secretariat and the communications and enquiries addressed to the health departments of the various countries. A particular difficulty arose in regard to the choice of representatives belonging to countries not Members of the League, as, for example, Russia, with whom other countries had no diplomatic relations. It was desirable that some authoritative body should be able to guarantee that the persons chosen had the necessary qualifications. Personally, he was in favour of selecting not more than two persons from each country. He accepted, though with some hesitation, the very small scale on which individual interchange or individual "fellowship" was to be provided this year. He proposed that a small sub-committee should be appointed to consider the choice to be made among those who had applied and the invitations which might be issued for individual arrangements. Such a Committee would work admirably if it were allowed a reasonable discretion. He doubted whether, for collective interchange, it was advisable to have two consecutive courses in different countries, and he would like to have a further explanation of this system.

He thought the Committee owed a great debt to those members who had so largely contributed to the success of the first experiment in Belgium and Italy, and also to Dr. Rajchman for the energy he had thrown into the arrangements.

Dr. RAJCHMAN said it would be difficult to appoint a committee which would guarantee the qualifications of candidates. Experience had shown that such guarantees were hardly necessary. Russian representatives had taken part in the interchange in Italy immediately after the Fascist revolution. The three Russian representatives proposed for the next experiment appeared to be duly qualified medical experts.

Sir George BUCHANAN said it would be sufficient if Dr. Rajchman had personal knowledge in regard to the work and scientific qualifications of the persons selected, or if these persons were known to the officers of the Epidemic Commission. Sir George Buchanan outlined the proposed programme for the English interchange. He would not be able to take as direct a personal share in the arrangements as had M. Velghe or Dr. Lutrario, owing to the way in which the work would have to be carried out. The interchange would be conducted by the Society of Medical Officers of Health, which was a body independent of the British Government and included medical officers from all parts of the United Kingdom. He had discussed the programme with the council of the society, and had undertaken to sit on the committee which would be responsible for the arrangements and expenditure. He would act as intermediary between the British Committee and the Health Section whenever his services could be useful.

The Society of Medical Officers of Health proposed to take for the experiment four or five specific areas, each of which would include a large city, a port, and one or two county or agricultural districts. In each area the medical officers would form a committee, which would show the visitors the practical working of the local system and give demonstrations. There would be a preliminary general instruction of the visitors in London beforehand. Instruction in special subjects, such as medical insurance, tuberculosis, venereal diseases, etc., would be left to the local officers. He feared it would not be possible to issue a detailed programme of the interchange

sufficiently early to prepare the visitors for the course, though he recognised the importance of this for future arrangements.

He asked for an explanation of the passage in Section 6 [of the Medical Director's report which appeared to insist that the national health administrations should have credits at their disposal for this interchange other than those supplied by the Rockefeller Foundation or the League.

He said he would submit a formal resolution for the appointment of a sub-committee to assist in the choice of candidates.

M. VELGHE was happy to note that his report had not provoked criticism. As stated in his report, emphasis had been laid in Belgium on the administrative and practical character of the interchange, as Prof. Bernard had suggested in August 1922, and experience had shown that in acting in this way the right direction had been given to the experiment.

The Committee, if it adopted the three final conclusions of the report, might be regarded as having adopted the report as a whole. These conclusions were, in fact, the conclusions drawn from the first experiment which has been made. The experiment just made seemed to show that the period of the interchange should be three months, divided into a period of six weeks for lectures and inspections and a period of six weeks for practical instruction. This rule, however, should not be regarded as absolute, for it was necessary to take into consideration particular conditions in each country.

It was necessary that the health officials taking part in an interchange should get into touch with the private and official organisations of the country, but it was clear that it was the health administration of the country which should serve as an intermediary for the organisation of the interchange.

Dr. CHODZKO thought that the interchange should be made in two countries successively, a small country and a large country, in order that those participating might become acquainted with as many health institutions as possible. They might pass two months in the large country and one month in the small country. He thought that it was unnecessary to devote six weeks to practical instruction, as M. Velghe proposed.

He submitted a formal proposal that the Committee should enquire into the position as regards the study of social hygiene in the universities of Europe and America. He would submit a draft resolution to this effect.

Dr. RAJCHMAN did not think it was possible to judge yet whether the interchanges should be effected among health officials dealing with general questions of social hygiene or among specialists.

The choice of officials was extremely difficult. The forms filled in by the health administrations gave useful information, but in this field they had as yet not had sufficient experience.

It was impossible to fix finally the number of officials to be appointed by each country. There were countries which might derive more profit from the interchange than other countries, and it was necessary to take into account both the number of the population and the needs of each country.

As regards individual fellowships, the best course was to adopt the proposal of Sir George Buchanan that a sub-committee should be entrusted with the preparation of a scheme for the next fiscal period.

It seemed preferable in every way to organise two consecutive courses. It appeared from conversations which he had had with those who had taken part in the first interchange that it was difficult to profit from a period of practical instruction which exceeded one month, and it was necessary to ensure that the practical instruction was not a repetition of the inspections, as had at times been the case in Italy and in Belgium.

It was advisable for many reasons that the interchange should be held in two countries. Health officers should have the opportunity of seeing as much as possible. For this reason it seemed advisable to organise the interchange in a large and in a small country. In a small country a territory was not too extensive; it was easy to visit; it did not present wide differences between the provinces. In six weeks one might completely visit Belgium, but not a large country like England, Germany or France. This plan would enable the health officials to make useful comparisons between such countries as Germany and Switzerland, with entirely different social systems. They would see how the same problems might be differently solved. It was, of course, necessary to avoid drawing up rigid rules, and advisable to await the results of experience.

The observations of Sir George Buchanan and M. Velghe had shown the necessity of communicating in advance a detailed programme. He hoped to be able to submit to the Committee three months in advance a programme for the year 1924.

The reference to supplementary credits at the end of Section 6 of his report merely implied that the health administrations would have at their disposal other funds than those provided by the Rockefeller Foundation. These supplementary funds were at present provided by the League of Nations.

It was, of course, understood that the relations between the Health Committee and the countries in which interchanges took place would necessarily be official in character.

The enquiry proposed by Dr. Chodzko would be extremely useful, and it would, in any case, be necessary to have an enquiry in order to organise the interchanges. It would be better, however, that such an enquiry should not be official in character.

There was at Charlottenburg an Academy of Social Hygiene, which might render valuable services in the organisation of an interchange in Germany. It might be ascertained what were the institutions existing in each country, and a report might be submitted to the Committee in six months' time.

There was under consideration the preparation of a health manual for each country. This would enable the officials who took part in the interchanges to inform themselves as regards the health organisations of the various countries.

In conclusion, he asked the Committee whether it approved the organisation of an interchange in England and simultaneously in Austria.

Dr. RULOT, member of the Health Section, gave certain information as a health official who had taken part in the interchange organised in Belgium. Experience had shown that the interchange should be differently organised according to the age of the officials. Those who were young and at the beginning of their career required a long period of practical instruction. Older and more experienced officials considered a period of three or four weeks as sufficient.

Prof. Léon BERNARD pointed out that the members of the Committee were agreed on principles but that there were differences concerning their application. Everyone was agreed that the interchange should be of a practical character, but the word "stage" needed to be defined. In all instruction, there were three degrees of progress: lessons, demonstrations with inspections, and, finally, the "stage" or period of practical instruction, during which the pupils collaborated in the work of the officials. The period of practical instruction varied according as the pupils were young or experienced. One point seemed to be generally admitted: namely, that the lectures and the practical instruction should take place in the same country. As regards the question whether the interchange should be organised in one or two countries, it was necessary to define the object aimed at, and the character of those who took part, before it was possible to give a considered opinion.

He had never intended to under estimate the importance or necessity of close relations between the Health Committee and the health administrations, but in certain cases these relations might be purely formal. For example, as regards the question of tuberculosis in France, it would be necessary first and foremost to get into touch and collaborate with the "Comité national".

He supported the proposal of Dr. Chodzko for an enquiry into the instruction on social hygiene at the universities, as such instruction was assuming great importance in Europe and America.

Dr. CARRIERE again drew attention to the attitude of Switzerland towards the system of interchanges. Switzerland had not accepted the first invitation addressed to her. This was not from lack of interest in this new enterprise of the Health Committee. It was only, as he had already explained to the Committee, owing to the difficulties presented by a choice of candidates in a country like Switzerland, which, by the side of a central health organisation, had a whole series of cantonal services organised according to very different plans. He hoped, however, that the difficulties which resulted from this state of affairs were not insurmountable and that Switzerland might be able to participate in the near future in an interchange. He asked that Switzerland might not be forgotten in the invitations which would be sent out when future interchanges were organised.

Switzerland would be happy to welcome delegates of foreign health services. If the Health Committee thought that there was anything to be learned in Switzerland, and that it would be of interest to organise an interchange in Switzerland, Switzerland would, of course, do everything in her power to assist in putting the plan into execution.

M. VELGHE thought that the discussion had shown the importance of the question and that the views expressed would be useful in the preparation of future interchanges. He thought that Dr. Chodzko had been too categorical in his declaration stating that there should necessarily be an interchange in two countries. Although Belgium was a little country, it had not been possible to show many things of interest to the officials in the course of the first interchange. As Professor Bernard had said, the duration of the period of instruction must necessarily vary according to the countries and the circumstances. The length of the practical instruction could not, however, be curtailed, for it was this instruction which enabled the officials to become acquainted with the daily life of the country and to realise the difficulties which had to be overcome.

Alluding to the final sentence in Section 6 of the report of the Medical Director referred to by Sir George Buchanan, he thought that this sentence should be retained, for it would accustom the Governments to the idea of bearing a share in the expenses occasioned by the interchanges and of assuring the permanence of the system of interchanges progressively with the assistance of the League of Nations.

The CHAIRMAN insisted on the importance of practical instruction, but it was necessary to ensure that the practical instruction should not overlap instruction by inspections.

Sir George BUCHANAN said he had not been entirely convinced by the explanations given in regard to the sentence in Section 6 of the report. The allusion to supplementary credits introduced a new principle. He would be prepared to suggest an alteration in phrase which would indicate that this principle might have to be considered in future, but he would not be disposed to go beyond this.

He endorsed the observation of Dr. Carrière. The fact that a country had not been invited, or had declined an invitation, should not hinder it from taking part in a future interchange. He hoped that an invitation would be addressed to the British Dominions.

Dr. LUTRARIO thought that the length of the course in a country must necessarily vary according to the country. A course of 35 days in Italy had been quite inadequate. At least two months would be necessary.

Dr. RAJCHMAN asked whether the Committee was of the opinion that an interchange should be organised in Austria as second part of the interchange beginning on March 1st in England.

This proposal was adopted.

Dr. BERNARD asked whether the Committee was of the opinion that the courses should be prolonged in a single country or organised to take place in two countries consecutively.

M. VELGHE asked the Committee whether it was disposed to adopt his three final conclusions. The first conclusion affirmed generally that a period of three months was necessary for an interchange in certain countries such as Belgium and Italy, but the conclusion was drafted in such a way that it would permit of a different experiment being tried in England, where a period of six weeks would be sufficient. This would leave full latitude for the organisation of interchanges in other countries.

Dr. RAJCHMAN thought that Prof. Bernard had raised the most important question in his reference to the character of the persons participating. It was necessary to ascertain the object: whether it was desired to organise missions of enquiry or scientific instruction. This question had already been thoroughly examined. If the fellowships of the Rockefeller Foundation were destined first and foremost for young doctors who were pursuing their studies, the interchange might be reserved for health officials. The best course would be to make a few further experiments before reaching a definite decision.

The Committee adopted the three resolutions of M. Velghe's report.

Sir George BUCHANAN submitted the following resolution, which was also adopted:

"The Committee asks the Chairman to nominate a sub-committee to consider the most appropriate use of the portion of the funds earmarked for individual arrangements for interchange during the present financial year and to consider the possibilities of adopting the system of individual arrangements on a larger scale next year."

This proposal was adopted.

The Committee appointed as members of the Sub-Committee, the Chairman, Sir George Buchanan and M. Velghe.

Dr. CHODZKO presented the following proposal:

"The Health Committee asks the Medical Director to collect information concerning the position in the universities of Europe, America and Japan as regards the study of medical and social hygiene and to present the results of his enquiries at the next session of the Committee."

This proposal was adopted.

FIFTH MEETING

Held on January 11th, 1923, at 5 p.m.

15. Standardisation of Sera: Report of the Chairman.

The CHAIRMAN presented a report on the Second International Conference on the Standardisation of Sera and Serological Tests, which had been convened by the Health Committee in November 1922 at the Pasteur Institute in Paris.

He briefly summarised the progress achieved by the special sub-committees and by the Conference.

The Sub-Committees on Anti-Diphtheritic and Anti-Tetanic Sera had approved the resolutions adopted at the Serological Conference held at Geneva in September 1922.

The Geneva Conference had finally settled the question of the standard of the diphtheria antitoxin, and had adopted in principle an international unit for the tetanus serum.

The Sub-Committees on the Anti-Meningococcus Serum, the Anti-Pneumococcus Serum and the Anti-Dysentery Serum had as yet reached no definite conclusion. Important progress had been made towards the standardisation of anti-dysentery serum, and there was hope of achieving good results in the near future.

In the sero-diagnosis of syphilis no definite results had been achieved.

He proposed that the results in regard to the anti-diphtheritic serum and the anti-tetanic serum should be communicated to the Office international, which might consider the question whether the Governments should be approached with a view to the adoption of the unit proposed for an international standard.

He asked for authority to continue the researches which were in progress, to convene sub-committees of experts when the researches were sufficiently advanced, and to send experts to the different institutes which were participating in order to compare the results better.

He suggested that the report on the Second International Conference should be forwarded to the Office international.

Sir George BUCHANAN congratulated the Chairman on the progress achieved, which was so largely due to Dr. Madsen's personal efforts. This work had already attracted considerable attention, and public opinion had been greatly struck by its practical utility. In the British Press, for example, there had been very favourable comment, not only in the medical journals but in the ordinary newspapers.

M. VELGHE supported the proposal that the Office international should be invited to undertake enquiries whether the nations were prepared to adopt the units already recommended by the Sub-Committees. He was sure the Office international would feel itself indebted to the Health Committee for its valuable work in carrying forward a task in which the Office itself had taken the initiative.

The Committee approved the proposal of the Chairman.

16. The Standardisation of Biological Remedies.

The CHAIRMAN presented a report which he had received from Dr. Dale, upon his invitation, on the possibility of establishing international standards for remedies, other than sera and bacteriological products, the activity and safety of which could only be controlled by biological methods (Annex 9).

The report concluded with a suggestion that an international conference on the lines of the International Serological Conference might do valuable work in this direction. It was suggested that such a conference might be called in Edinburgh in July 1923, when experts from the United States would be attending the International Physiological Congress which had been convened for that date.

The Chairman considered that it was premature to convene a conference to settle finally an international standard, but that it would be possible to assemble a number of experts in July

for a preliminary exchange of views. It was important to establish the principle that the Health Organisation of the League should take the initiative in seeking international agreement before too many Governments had introduced different standards into their regulations. He asked whether the Committee would authorise him to communicate with the experts of different countries, and to study the questions mentioned by Dr. Dale.

Sir George BUCHANAN said that Dr. Dale wished it to be understood that this report was, strictly speaking, only a memorandum of his personal views, communicated by request to the Chairman. It was none the less valuable on that account. If such a meeting were held in the United Kingdom, the British Minister of Health and the British medical health officials would be happy to assist. He thought it desirable that in such discussions there should be a collaboration between the scientific specialists and the administrative officials who were, or might be, concerned with the practical application of these standards, and that administrative considerations should not be neglected in selecting subjects for the Conference.

Prof. BERNARD pointed out that no administrative action was involved until the experts had first studied the question and formed some opinion of the possibility of fixing standards and inviting the Governments to accept them. It was advisable to take up the problem immediately in order to prevent the experts in various countries from proceeding in different directions and introducing a diversity of standards and methods, as had happened in the case of sera and serological tests.

Dr. RAJCHMAN warned the Committee that it would not be in a position to finance any additional researches in July, though perhaps the Council might be induced to find a small sum for the purpose.

M. VELGHE, referring to the paragraph in Dr. Dale's report on salvarsan, pointed out that in Belgium there was official control of this product.

Dr. CARRIÈRE said that official control was exercised in Germany, where the product was a monopoly.

Prof. NOCHT said that the situation in regard to this control was complicated. He was not sure whether the product was controlled officially by the Government.

The CHAIRMAN pointed out that the question of an official and formal agreement was not yet involved. There would first have to be a preliminary investigation by the experts, but they would include men used to the practical questions involved, for instance, those concerned with the pharmacopœias. The Office international was already dealing with the question of salvarsan and was reporting on the various systems of control.

It was agreed that the Chairman should be authorised to get into touch with the American experts and to convene a conference to study the question.

Dr. RAJCHMAN enquired whether it would be possible to consider the possibility of making use of the new method of vaccination *per os*, recently discovered at the Pasteur Institute. The new method might be investigated by experts, who might decide under what conditions it should be applied and how the results might be controlled. The Epidemic Commission was at present vaccinating on a large scale against dysentery in Greece, and Dr. Calmette was ready to supply the vaccine.

Sir George BUCHANAN doubted whether such investigation was within the field of work of the Health Committee, though he was entirely in favour of taking steps to secure the trial of the method, under satisfactory conditions, by the responsible public health authorities.

Prof. BERNARD did not think that a body making such an enquiry should be regarded as representing the Health Committee. It would have to act as a body of experts in collaboration with Greek specialists and officials.

After some discussion, Dr. RAJCHMAN withdrew his proposal.

SIXTH MEETING

Held on January 12th, 1923, at 10 a.m.

17. Study of Malaria in Italy.

Dr. LUTRARIO informed the Committee that the Italian Government would welcome the experts who were coming to study malaria in Italy and would endeavour to assist them in their work. He read a telegram (Annex 10) which was cordially welcomed by the Committee. The Committee asked Dr. Lutrario to forward to the Minister its warmest thanks.

18. Letter from Sir Havelock Charles.

The CHAIRMAN communicated a letter from Sir Havelock Charles, who regretted that he was unable to attend, but hoped to be present at the next session of the Committee.

19. Publication of the Reports of the Serological Conference.

The CHAIRMAN said that the financial position did not permit of the publication of these reports in three languages. In these circumstances they could not be published in German *in extenso*. The French text might appear as an annex to the Annals of the Pasteur Institute. As regards the English text, he had received a proposal of which Sir George Buchanan would give particulars.

Sir George BUCHANAN said that if the Committee desired a special volume in English, he was prepared to do all in his power to assist in the necessary arrangements through the General Medical Council. He had just received a telegram from Sir Walter Fletcher to the effect that the Medical Research Council would endeavour to meet all the wishes of the Health Committee in the matter, but suggesting that the reports might be summarised and that the League of Nations should buy 750 copies at a price of £150. In this way no material charge on the British Treasury would be involved.

Dr. RAJCHMAN said that the publication of the French text in the Annals of the Pasteur Institute would cost 4,000 francs and that the publication of the English text would cost 3,000 francs. This made a total of 7,000 francs, while the budget only provided 15,000 francs for all the publications of the section. It would, moreover, be impossible to have a complete French text and a summarised English text.

The CHAIRMAN said that the reports would be difficult to summarise. In view of these difficulties it would perhaps be necessary to publish them only in French, since the Annals of the Pasteur Institute were distributed to all laboratories.

Dr. RAJCHMAN said it was an established principle that the publications of the League of Nations should be printed in the two official languages.

Dr. CAROZZI enquired whether it would not be possible to have the reports printed at a cheaper rate in Austria.

M. VELGHE doubted whether it was advisable to hand over these reports for publication to a private body. He would more readily have understood their publication by the Health Section in the Bulletin of the Office international, with whom the Health Committee was in close association. The Bulletin had as wide a circulation as the Annals of the Pasteur Institute, and measures could be taken to ensure that all scientists and laboratories needing the reports should receive copies. These reports should, in his opinion, be published like all the works authorised by the Health Committee, and not as an annex to a private review.

Dr. RAJCHMAN associated himself with the views of M. Velghe. He pointed out, however, that the Assembly had decided in principle against the gratuitous distribution of League publications. The Committee might ask the Council to make an exception in this particular case.

Sir George BUCHANAN agreed that the general conclusions of the reports were likely to interest a wide public and thought that these conclusions should be published under the authority of the League. He doubted, however, whether a detailed account of the laboratory work would be of interest to any but scientific men able to read French, English and German.

It would suffice to print these detailed accounts in one language only, or to let each contribution be in the language in which it was contributed.

Dr. RAJCHMAN pointed out that the Americans at the Serological Conference had insisted on English translations. He thought the best way was to publish the reports as ordinary League publications in the cheapest market and to restrict their gratuitous circulation.

M. VELGHE made a strong appeal to the Committee not to economise in publications which were of general interest and value.

The CHAIRMAN said that this was the first time that such an effective collaboration had been established between scientific institutes in different countries; he emphasised the importance of publishing the results of these researches collectively. The great value of the work done was that it permitted comparison between different methods and brought them into closer relation. It would be of immense value to present the results as a whole.

After some discussion, *it was agreed, on the proposal of M. Velghe, that the report should be printed by the Health Section of the League in English and French and issued as an ordinary League publication. It was understood that there would be a gratuitous distribution to the principal institutes and laboratories according to a list obtained from the editors of the Annals of the Pasteur Institute, the Bulletin of the Office international, and the Medical Research Council.*

20. Report of the Mixed Opium Sub-Committee.

Dr. CARRIÈRE, acting as Rapporteur for the Mixed Sub-Committee, presented his report and summarised the conclusions of the Sub-Committee (Annex 11).

M. VELGHE regretted that there was no reference to Belgium in the report, though Belgium had replied to all Enquiries and had succeeded in obtaining precise figures regarding her legitimate requirements for internal consumption. Belgium had applied with success the first of the methods for arriving at trustworthy statistics mentioned in the report of Dr. Carrière. No imports or exports could take place without the sanction of the Ministry of Health. Only a certain number of importers were authorised to import drugs, and these importers were controlled by the health authorities and required to keep a register of drugs received, sold, or used for manufacture. The importers were allowed to sell only to druggists, who were, in turn, required to keep a register of their purchases, sales and stocks. There were two inspectors of druggists, who regularly made tours of inspection. No private person could get drugs without a medical prescription. Breaches of the regulations were severely punished.

The second and third methods of checking the statistics mentioned in the report were necessary only in the absence of trustworthy statistics obtained by the first method.

No method, however, was effective for dealing with the illicit commerce in drugs, except a control of their production. In spite of all vigilance at the frontiers and penalties for offences against the regulations, it was practically impossible to stop smuggling. The Academy of Medicine at Paris had also come to the conclusion that only a control of production could be effective. There should be a control of production in every country, and the Opium Committee might assist by enabling the Governments to prevent an overlapping of their activities, and by co-ordinating their efforts.

Dr. CARRIÈRE explained that Belgium did not figure in his report, as it was based on replies to the questionnaires of the Advisory Opium Committee which had been communicated to the Mixed Sub-Committee. In these replies Belgium was not mentioned. The Belgian system, which might be regarded as a model, was already known, and it would be well if the example of Belgium were followed. He had expressly observed in his report that, as soon as the system of import and export licences, on which the Belgian system was based, were generally applied, other methods of enquiry would be superfluous.

Dr. CHODZKO regretted that the opium question, which was purely a medical question, should have been entrusted to a body which lacked the medical competence to deal with it. That the position was unsatisfactory was shown by the fact that it had been found necessary to appoint a Mixed Sub-Committee, on which medical experts might sit in order to assist in defining the legitimate needs of the various countries. Medical opinion was unanimous that only a control of production could be effective. This question had been warmly debated in the Opium Committee and again in the Mixed Sub-Committee. He urged the Health Committee to adopt a resolution to the effect that control of production was necessary. Such a resolution would serve as a moral support for the members of the Opium Committee who agreed with the views taken by the medical experts on the subject.

He presented for the consideration of the Committee three proposals for a plan of action in combating the abuse of dangerous drugs and controlling their production. These were the proposals to which allusion was made towards the conclusion of the report of the Sub-Committee. In these proposals he insisted: (1) on the necessity of controlling production; (2) on the advisability

of centralising this control in the Opium Committee and of exercising it by means of special commissioners of the League; and (3) on the advantage of making the health administrations of the various countries responsible for centralising statistics, issuing licences, etc.

M. VELGHE thought the Committee would approve in general the proposals of Dr. Chodzko. The methods he suggested would, however, lead perhaps to difficulties. Was it possible for the League of Nations to exercise control over factories by means of special commissioners? Most countries would oppose such a suggestion. He thought it would be better to leave the control in the hands of the health administrations themselves.

Dr. CARRIÈRE suggested that Dr. Chodzko should put his proposals in a more general form, insisting on the need for a strict control, but not mentioning officials of the League.

Sir George BUCHANAN said he would support a general resolution, but the proposals as they stood would require consideration.

He assumed that the Mixed Sub-Committee would continue its work and would examine the results of the enquiries that had been decided upon. He hoped that Dr. Carrière would act continuously as rapporteur, with whom the other members of the Health Committee might correspond from time to time.

Dr. CARRIÈRE said that the Mixed Committee would continue its work with the help of the Secretariat.

Dr. CHODZKO said that the principle of control by special commissions had already been admitted by the Opium Committee. Among these special commissions there were included representatives of the League. He doubted whether control by the health administrations would in all cases be trustworthy. He thought it would be an advantage to mention in his proposal the method of control by special commissions, as it had been accepted by the Opium Committee. He would further like to insert a provision that annual reports on the control of production should be sent to the Health Committee.

Dr. LUTRARIO said that the health administrations had not sufficient officials to carry out the control themselves. In Italy, control was left to the Customs, and the control was adequate.

Dr. RAJCHMAN called the attention of the Committee to the resolution of the Third Assembly asking that the question should be studied and a scheme presented to the Fourth Assembly.

Dr. Anselmino had been asked to make the necessary enquiries and to present a report. It had been decided that a member of the Health Committee should be placed at the service of the Mixed Sub-Committee for this purpose. It would be necessary for Dr. Anselmino to consult members of the Health Committee concerning their own countries. The Health Section was prepared to assist by delegating one of its members for this special service.

As regards competence, the Health Committee was fully entitled to adopt any resolution it desired on the subject of the control of opium. It would be for the Council, if it so decided, to act on such a resolution or to forward it to the Opium Committee for advice.

M. KUSAMA, referring to the proposal for an annual report, doubted whether the results would be satisfactory. Only few replies had been received to the last questionnaire issued by the Mixed Sub-Committee.

After further discussion, *it was agreed that a draft resolution should be prepared on the basis of Dr. Chodzko's proposals for the consideration of a later meeting of the Committee.*

21. Report of the Sub-Committee on Measures of Public Health and Quarantine in the Near East.

Sir George BUCHANAN submitted the report of the Sub-Committee (Annex 12). He explained that the Sub-Committee had thought it advisable to limit itself to the conclusion of the Commission of Enquiry of last spring. He regretted it had not been possible to take into consideration a note which had been addressed to him by Dr. Lutrario. This had only reached him a few days before the meeting of the Committee. He did not know what would be the result of the decisions taken at Lausanne, but the report of the Commission of Enquiry to the Near East had been recognised as a valuable contribution to the principles which should govern measures of health and quarantine. No objection had been raised to the technical recommendations. He suggested that the Commission should remain in being in order to advise the Governments if it should be necessary.

Dr. LUTRARIO reminded the Committee of the discussion which had taken place in Paris, and read to the Committee some introductory paragraphs of his note to the Medical Director (Annex 13). He had drawn attention to the tendency for pilgrims to Mecca to abandon the old sea routes and to travel by rail, and had supported a recommendation to the effect that a body of an international character should be entrusted with the duty of co-ordinating the work of the several sanitary authorities responsible for the health of the pilgrims. The text of this recommendation as published was to the effect that a co-ordinating body "should be formed". This was not the text which had been adopted in Paris on the motion of himself and of M. Barrère. It had been desired to avoid the impression that the formation of a new international body was contemplated.

Sir George BUCHANAN said that he and Dr. Lutrario were agreed that a co-ordinating body should be entrusted with these duties and that this body should be placed in relationship with the Health Committee. They differed, however, on the important question of method. Dr. Lutrario

desired the Health Committee to act through its own officers, whereas he would leave the actual organisations on the spot to arrange a system of co-ordination, to be approved by the Health Committee. He did not think the Health Committee was in a position to accept responsibility for co-ordinating quarantine measures. The principle of a co-ordinating body placed in defined relation with the Health Organisation of the League had been accepted by the Technical Committee of the Lausanne Conference, which was considering a special article which would apply not only to the co-ordinating body concerned with the Mecca pilgrimage but to any similar body which might be set up under the Peace Treaty, such as the proposed sanitary commission for the Straits. The article in question was based on Article 154 of the draft Health Convention suggested by the Near East Committee.

M. VELGHE said it was difficult to discuss a question of drafting in the absence of the minutes of the Paris meeting. The advantage of the Paris text, however, was that it left open the question whether it was necessary to create a new organisation or whether it was possible to have recourse to an existing organisation. It was this consideration which, in his opinion, had determined the acceptance by the Committee of the Office international of the draft proposed by M. Barrère and Dr. Lutrario.

It was decided that the Sub-Committee on Public Health Measures and Quarantine should continue its work, with Dr. Lutrario as an additional member.

SEVENTH MEETING

Held at on January 12th, 1923, 5 p.m.

22. National Council for Combating Venereal Diseases.

Sir George BUCHANAN said he had received a letter from the Secretary of the National Council for combating Venereal Diseases stating that there would be a meeting in Paris in January of the various voluntary national societies interested in this work. The League of Red Cross Societies was providing the secretariat. The object of the meeting was to consider plans for the establishment of an international council to combat venereal disease. The Secretary of the Council hoped that it would be possible for a member of the Health Section to be present at the meeting, and proposed to send a formal invitation to that effect.

He felt that some response should be made to this suggestion. The voluntary bodies which were fighting venereal disease rendered valuable assistance in forming public opinion.

M. VELGHE agreed that the work of private bodies was particularly valuable in the direction of education and propaganda, and that it was important to encourage their efforts. He had not heard of the meeting which was about to be held in Paris, and feared that the National Council had neglected to prepare the ground sufficiently in advance.

Sir George BUCHANAN said he did not press for an immediate decision that a representative be sent to the meeting, but he felt the invitation should not be ignored and that the interest of the Health Committee in the question should in some way be indicated.

It was agreed that the Chairman, in consultation with the Medical Director, should communicate with the National Council.

23. Epidemiological Intelligence and Health Statistics.

Dr. RAJCHMAN, referring to his memorandum on the subject said it was proposed to undertake a systematic study of the organisation of the health administration and the conditions under which public health statistics and epidemiological returns were collected in the various countries, and of the possibility of introducing some uniformity into these methods and appreciating the results as a whole. Mr. Sydenstricker would put himself in touch with authorities and experts in Great Britain, Belgium, Italy and Germany, and a list of medical correspondents in the various countries would be drafted, as had been suggested by M. Velghe a year ago. In the course of 1923 it would be possible to assemble material which would form the basis of further investigation.

He had discussed the organisation of epidemiological intelligence in Russia with Dr. Siemashko, and had arranged that an enquiry should be conducted into the question of typhus immunity and the limits of the endemic area of cholera in European Russia.

Sir George BUCHANAN, referring to a note he had presented on the memorandum of the Medical Director alluded to the promise he had made to arrange for a memorandum to be prepared by his advisers for consideration by the Health Committee. He had consulted his British colleagues on the subject and come to the conclusion that, before suggesting methods or lines of work, it was desirable that the matter should first be discussed with Mr. Sydenstricker himself. One reason for this was the importance of preliminary consultation in order to separate the work which must be undertaken, after suitable preparation at the Central Office, and the work which the Health Organisation could promote more effectively by using statistical and epidemiological investigation in different countries.

He laid stress on the international nature of much of the work already done in England, as in other countries.

He enquired whether the assistance to be appointed in accordance with the suggestion contained in the memorandum of the Medical Director would be highly trained statistical experts or only work assistants.

Finally, he suggested that, after the preliminary enquiries into the problems involved had proceeded for a certain time, it might be advisable to appoint a small standing committee of members of the Health Committee to consider and advise on the nature of the work to be undertaken

M. VELGHE said that, before taking any further steps, it would be well to await the arrival of M. Sydenstricker. At a later stage it might be advisable for certain members of the Health Committee to meet Mr. Sydenstricker and discuss with him the nature and progress of the work.

Dr. RAJCHMAN explained that the two assistants to be appointed under his memorandum would be two Members of Section of Category B, with medical qualifications.

24. The Recent Work of the Epidemic Commission.

Sir George BUCHANAN read his report on the recent work and the present position of the Epidemic Commission (Annex 14). He drew attention to certain discrepancies which he had noted between the English and French texts, and reserved the right to revise the figures given in the report in the event of some error having passed unnoticed.

Dr. RAJCHMAN proposed certain amendments of detail, which were approved by the Committee and duly noted.

The report was adopted.

25. Campaign against Epidemics in Greece.

Dr. RAJCHMAN informed the Committee that the Italian Government had just decided to place at the immediate disposal of the Epidemic Commission sanitary equipment for the campaign against epidemics in Greece which would be restored by the Commission later on. Thanks to this contribution, and to the philanthropic action of the Italian Government, thirty movable shower-baths had been obtained.

26. Red Cross Conference at Warsaw.

Dr. RAJCHMAN informed the Committee that a conference of the Red Cross Societies would be convened at Warsaw on April 9th, 1923. The Red Cross Societies from the following countries had arranged to attend: Bulgaria, Esthonia, Hungary, Roumania, the Kingdom of the Serbs, Croats and Slovenes, and Czechoslovakia. Invitations had been sent to the Comité international de la Croix-Rouge, the Secretariat of the League of Nations, the International Labour Office, the Pasteur Institute, and the Rockefeller Foundation.

Dr. Chodzko, as the result of an enquiry addressed to him by the Medical Director, had replied that the Polish Government was interested in this Conference.

The Medical Director had enquired as to the programme of the Conference, and had pointed out that, in the view of the Epidemic Commission, the campaign against epidemics was the duty above all of the Governments. It appeared that this also was the opinion of the Red Cross Societies.

The Conference had put on its agenda the following questions:

Development of the Red Cross Societies in Eastern Europe;

Co-operation of the Red Cross Societies with the Governments and private associations;

Immediate relief work; and

Services to be rendered by the League of Red Cross Societies to national societies.

He had been informed by the Comité international de la Croix-Rouge that the Soviet Red Cross was asking for its assistance in the campaign against malaria in Turkestan. The Comité international enquired whether the Epidemic Commission could help.

He proposed to reply that all the information at the disposal of the Epidemic Commission would be placed at the disposal of the Comité international, and that the Epidemic Commission was prepared to draw up a plan of action in co-operation with the Comité international if there were funds for the work.

Dr. CHODZKO thought that the Health Organisation of the League should be represented at the Warsaw Conference. The Conference would have an important result if it definitely decided what should be the duties of the Red Cross Societies in time of peace.

Sir George BUCHANAN thought that, in view of the wish expressed by Dr. Chodzko and of the relations between the Health Committee and the Red Cross Societies, it was necessary to accept the invitation.

The Committee decided to send a representative to the Conference of Red Cross Societies at Warsaw and to leave the choice of this representative to the Chairman.

EIGHTH MEETING

Held on January 13th, 1923, 10.30 a.m.

Present: All the members of the Committee with the exception of Prof. Léon BERNARD.

27. Report of the Sub-Committee on Waterways.

Dr. LUTRARIO presented a summary of the work of the Sub-Committee. A plan of investigation had been drawn up for the purpose of collecting as much information as possible. Enquiries had been sent to Germany, Austria, the Kingdom of the Serbs, Croats and Slovenes, and Italy. Each of these countries had been the subject of a report which had been noted by the Sub-Committee.

The plan of work which he had been instructed to draw up consisted of two parts: (1) principles on which a set of regulations was to be based; (2) a plan of action. In the second part, two periods were contemplated. There would be a first period of preparation, during which each State would instruct its officers, and there would be a second period when the organised service would enter upon its duties. A distinction was drawn in the working of the service between normal conditions and emergency conditions in times of epidemic.

The discussions of the Mixed Sub-Committee had dealt with questions of principle. It had been thought necessary to define the main principles of action, since the task was of a novel character.

The members of the Sub-Committee, after thorough discussion, had reached agreement on the principal questions. It had seemed unnecessary for the Health Committee to give an opinion in advance of the Transit Committee, and the fear of a possible interference with commerce by river had been cleared away. It had been agreed that the costs arising out of the regulations should not be met by means of taxes on navigation.

It had also been recognised that the measures to be taken should be taken as far as possible at the place of origin of the epidemic. It had been felt that the control should be exercised under the direction of the health administrations of the various countries, and that the question of an agreement should be examined concerning a possible collaboration with existing international organisations.

The essential principles on which the members of the Mixed Sub-Committee had agreed were as follows:

Waterways of international concern must be taken particularly into consideration, but it was also necessary to consider river basins and lakes from the point of view of navigation.

The declaration of diseases should be compulsory, regard being had to the following distinctions: diseases such as plague and cholera should, in accordance with the international convention of 1912, be declared as soon as a case occurred. Diseases such as typhus, relapsing fever and small-pox should be declared as soon as the existence of an epidemic centre was notified. Infectious diseases should be made the object of a declaration before having become at all widespread in a given region.

The measures to be taken should not be unduly restrictive so that river commerce might not be impeded. Measures would be compulsory for one class of diseases; they would be optional for another class, and no measures would be taken except for the diseases actually mentioned.

Internal waterways would be under the control of the State. As regards international waterways, the Sub-Committee was unanimously of the opinion that, where an international body existed, its collaboration should be invited.

In organising a service of control, it was necessary to make as much use as possible of the services and staff at present existing, and any new organisation should be of an extremely simple character. Each State should organise its service in such a way as to be able to assist in case of danger at the place of origin of the epidemic.

The co-ordination of national action might be secured by means of conferences, in which the officials of the interested States would take part. In addition, a collaboration between the Health Committee and the Transit Committee and existing international bodies might be organised.

Several questions had been raised during the discussion. The members of the Sub-Committee had agreed that river navigation ought not to be burdened with duties and taxes. Each State must accept the responsibility of meeting the cost of the measures of protection and control. As regards sanctions, it seemed advisable to reserve this question for a Committee of Jurists.

The Sub-Committee had also reserved the question of the contamination of waterways. It was difficult to decide when a river was contaminated, to what extent it was contaminated, and when it ceased to be contaminated. It seemed sufficient in many cases to issue a warning to the

authorities on the lower reaches of the river. Certain States might also be invited to undertake works to avoid contamination, particularly by sewage.

In conclusion he hoped that the Health Committee would endorse these principles, which had been unanimously approved by the Mixed Sub-Committee.

The CHAIRMAN thanked Dr. Lutrario and Dr. Chodzko, the Chairman of the Mixed Sub-Committee, for their work.

M. VELGHE associated himself with the thanks of the Chairman. This question of waterways was very important, for it was to be expected that epidemics from Eastern Europe would spread in proportion as commercial and other relations were resumed. He approved the principles described by Dr. Lutrario, which were in conformity with those of modern preventive science. He thought, however, that it was useless to distinguish between diseases so far as the obligations to declare them was concerned. This distinction was not scientific and might produce a regrettable uncertainty in the health services of the various countries. It would be better to ask all riparian States to notify all diseases without distinction, and to accustom them to publishing frankly all that happened in their territory in accordance with the recommendations of the health authorities of the various countries, which tended to become increasingly definite in this respect. In this way progress would be made towards a general agreement which would serve as the basis for an international convention. Mutual confidence was essential. With mutual confidence it was possible to reduce to a minimum measures of prevention taken against adjacent countries.

Dr. LUTRARIO explained that the Sub-Committee, in distinguishing between different diseases, was inspired by the Health Convention of 1912 and the Warsaw Conference, which provided that for certain diseases a single case should suffice to make a declaration compulsory, whereas for other diseases the existence of an endemic area should be notified. Personally, he would be delighted if it were possible to obtain a declaration in every case of disease which broke out.

Sir George BUCHANAN thanked Dr. Lutrario for the clear summary which he had made of a difficult and complicated question. In order to arrive at principles, certain hypotheses appeared to have been made. An imaginary continent had been taken, with an imaginary international waterway, hypothetical reiparian States, and well-organised sanitary services. It was perhaps good to begin with a study of principles, but it must be realised where these principles were leading, and their application had to be considered. He was convinced from personal experience that in starting public health reforms or new sanitary measures it was often best not to press a comprehensive programme based on irreproachable general principles. Better practical results were sometimes obtained by making an attempt to deal effectively with one or two matters which urgently required attention. The best procedure might be to take an actual river—for example the Danube, which needed specially to be watched at the present time—and to send an expert of the Health Committee with an expert of the Transit Committee to enquire on the spot exactly what was done, what was wanted to meet present risks, and to study how these risks might be met in practice. Co-ordination of effort was sound, but one first needed to know what there was to co-ordinate in the particular instance.

As regards taxes, he felt that they should be as far as possible avoided. If a riparian State, however, was obliged to organise a new and extensive service of control, one could hardly prevent it from levying on navigation in order to raise the necessary money.

Dr. LUTRARIO thought it was impossible to take up practical questions without previous agreement as to principles. The Sub-Committee had contemplated a general system of rules, the application of which might vary according to the different waterways. The same was true of all international conventions. He was ready to support the proposal of Sir George Buchanan, but it must be admitted as a preliminary that a general system of rules was necessary. There already existed for the Danube an international commission and a health committee.

As regards taxes, it had been decided in principle not to impose them, in order to give satisfaction to the Transit Committee, but it was possible that in certain cases they could not be avoided.

M. VELGHE thought that the practical suggestions of Sir George Buchanan were well founded, but the Sub-Committee had done well, in his opinion, to begin with the definition of certain principles.

It appeared from the reply of Dr. Lutrario that in recognising different categories of diseases, subject to reciprocal information, the Sub-Committee had respected precedents by existing conventions. He asked the Sub-Committee to reconsider this question and to take account of the new spirit which inspired the health administrations and prompted them to develop the system of a mutually sincere exchange of all the information at their disposal.

The Transit Committee had decided against the levying of sanitation taxes. As health expert, he agreed with this attitude. If there was need of resources they should be raised otherwise than by taxing river navigation. Too often taxes were merely an excuse for making money. He proposed to add to the principles defined by the Sub-Committee the following corollary: if taxes are necessary, the sums raised by means of them shall be devoted exclusively to health measures.

Dr. CHODZKO observed that, if a State decided to take measures of health, it was in the first instance for its own defence. It was therefore unjust to impose burdens upon navigation in transit.

He read the following resolutions, which had been unanimously adopted by the Mixed Sub-Committee:

1. The Sub-Committee considers that, in principle, it is the duty of the riparian States of an international waterway to declare regularly and frankly any information at their disposal on questions relating to infectious diseases of every kind.
- (M. Baldwin alone abstained.)

2. The Sub-Committee supports firmly the principle laid down in the International Health Convention of 1912 to the effect that measures taken against infectious diseases should, as far as possible, avoid any impediment to the movement of commerce and commercial relations both in the interior and with neighbouring countries.

3. The Sub-Committee thinks it essential that the sanitary control of traffic on internal waterways should be the duty of the public health authorities of the State. For waterways of international concern, without prejudice to the possibility of special provisions for portions of these waterways carrying an important maritime traffic, the control of sanitary measures should be the duty of the public health service of the riparian States.

In cases where an internal body, qualified from the sanitary point of view, has been or is to be established over these waterways, this body will be responsible for the execution of the necessary measures.

4. The Sub-Committee recommends that the service of control should be organised in normal times in such a way that it may be able to deal with any emergency.

With this object in view, it emphasises the necessity of resorting as much as possible to the resources and machinery already existing in the country, directing their activity towards the new duties which they may have to perform. The new machinery should be of an extremely simple character, and should consist as far as possible of material already available.

5. The Sub-Committee recommends the organisation of periodical conferences between the heads of the health services concerned to ensure the good conduct of the service.

6. The Sub-Committee is of the opinion that the collaboration of the Health Committee and the Committee on Communications and Transit of the League of Nations should be close and permanent in all that concerns the above problems, which are of equal interest to both bodies.

The CHAIRMAN suggested that the Committee, having noted the observations of Sir George Buchanan, should adopt these resolutions, which summarised the statement of Dr. Lutrario. These were general instructions which could enable the Mixed Sub-Committee to continue its work. He expressed the hope that, in future, draft resolutions of this importance would be submitted in advance in order that the Committee might have time to examine them.

Sir George BUCHANAN did not think it was necessary to adopt a formal resolution. The Committee had not had time to study in their details the documents concerning waterways. All he could do as a result of the clear statement of Dr. Lutrario was to approve the general instructions, which would enable the Sub-Committee to continue its work.

Dr. CHODZKO said that every discussion should normally be with a resolution, and that the Sub-Committee expected to receive instructions. If the draft resolutions unanimously adopted by the Sub-Committee were not adopted by the Health Committee, this would mean that the question was adjourned, a decision which he was prepared to accept if the Committee so decided. The Committee had already had to take decisions during the session on other reports which had been submitted to it on the same day. This raised the whole question of the method of work of the Committee.

Sir George BUCHANAN said he was ready to approve the resolutions in a spirit of accommodation, but he felt bound to state that it was contrary to good procedure to have to approve an important text without having had the time to examine it.

The Committee adopted the resolution of the Mixed Sub-Committee.

28. Resolution concerning the Control of the Production of Opium.

Dr. CARRIÈRE presented to the Committee a resolution concerning the control of the production of opium.

He explained that the last paragraph was a compromise between the text suggested on the previous day by Dr. Chodzko and the views of the Committee. Dr. Chodzko had asked that the control should be exercised by special commissioners of the League. Certain members of the Committee had protested against this suggestion. According to the present text, resort would be had to special commissioners in countries where control by the health administration was regarded as inadequate.

M. VELGHE asked that the last paragraph should be amended, as in its present form it was ambiguous. It was desired to control the *delivery* of the drugs by the countries and not their *manufacture*.

Dr. CARRIÈRE agreed to accept the amendment proposed by M. Velghe.

The resolution, with the amendment of M. Velghe, was as follows:

"The Health Committee,

"Having heard a report presented by the Mixed Opium Sub-Committee on the methods of enquiry to be used in determining the legitimate needs of a country in respect of opium, derivatives of opium and other narcotic drugs;

"And being of the opinion that the legitimate needs of a country are its needs exclusively medical and scientific;

"Adopts the proposals contained in the report of the Sub-Committee and recommends that the enquiries should be undertaken as rapidly as possible.

"It further feels it necessary to declare its opinion that in order to combat effectively the abusive use of these drugs, it is necessary strictly to control the delivery of these products by the centres of production. This control should be exercised by the health authorities in collaboration, if necessary, with the mixed commissions mentioned in the resolution adopted by the Advisory Committee on the Traffic in Opium during its session of May 1922."

Sir George BUCHANAN enquired whether the second paragraph implied the acceptance of the view that there was no possible legitimate use of opium other than medical and scientific uses. Did it mean that no other use ought to be regarded as proper? He was not entirely convinced that this interpretation could be applied to countries such as India. He did not wish to say that the view was mistaken, but he could only assent to a resolution in this sense with reservation.

Dr. CARRIÈRE said it was the intention of the resolution to assert that there could be no legitimate use of the drugs except for medical and scientific purposes. This point of view had been accepted by the Opium Committee, subject to a reservation made by Mr. Campbell.

Sir George BUCHANAN accepted the resolution with the reservation that he expressed no opinion on the interpretation of the term "legitimate needs" in the second paragraph, in so far as this term related to the use of opium in Eastern countries.

The resolution was adopted by the Committee.

29. Report of the Medical Director.

Sir George BUCHANAN said it had been agreed that the discussion and adoption of the report by the Medical Director should be regarded as an opportunity for members of the Committee to raise any question that seemed advisable concerning the general work of the Health Organisation.

He enquired whether it would be possible for Dr. Carozzi, the representative on the Committee of the International Labour Office, to present from time to time a report on the work of the International Labour Office in matters of industrial hygiene and the position with regard to international conventions dealing with questions of health.

Dr. CAROZZI said he would be very glad to present a report to the Committee at its next session.

NINTH MEETING

Held on January 13th, 1923, at 3 p.m.

Present: All the members with the exception of Prof. Léon BERNARD and Prof. SANTOLIVIDO.

30. Report of the Medical Director.

Sir George BUCHANAN said he had frequently had occasion to refer to the heavy character of the work which had to be undertaken during the sessions of the Committee. An improvement had to some extent been made, thanks to the efforts of the Medical Director, and the able conduct of the proceedings of the Committee by the Chairman. The work of the sessions, however, was still heavy and left little time for an exchange of views among individual members.

The work would perhaps be appreciably lightened if the report of the Medical Director were circulated well in advance of the session. There would in this case be time for explanations and amendments before the Committee came together.

The work of the Committee would also be easier if its members were kept more fully informed of the progress of the various questions during the intervals of their meetings. In particular, members should be kept informed of the work of the Sub-Committees. He mentioned several instances that had occurred since the last session of the Committee. He suggested that it should be a regular practice of the Sub-Committees to have a rapporteur, who would be responsible for keeping members of the Committee informed through the Chairman as to the results of their meetings.

He further suggested that, in circulating communications and documents to members of the Committee, the Secretariat should adopt a definite system of numbering the documents according to the series in which they occurred, and giving particulars as to subject, date and origin.

He hoped the Committee would not think he was insisting too greatly on points of procedure. The position of the British member of the Committee was a little difficult, as a great number of administrations were interested in the various problems discussed, and must be consulted before he was in a position to give a considered opinion, or participate in a vote of the Committee.

Dr. RAJCHMAN apologised to the Committee for the unavoidable delay which had occurred in the circulation of his report, and agreed as to the necessity of communicating it to the members at an early date.

He replied in detail to the observations of Sir George Buchanan concerning the work of the Sub-Committees. He accepted the suggestions of Sir George Buchanan in regard to the systematic numbering of the documents distributed.

Sir George BUCHANAN said he had no idea of criticising the past work of the secretariat. He had merely desired to put forward certain suggestions as to future procedure. He would like to insist on his proposal that on each Sub-Committee there should be a rapporteur responsible for informing the other members of the Committee of the progress and results achieved. It would be for the rapporteur and not the secretariat to draft such communications.

M. VELGHE said he thought that Dr. Rajchman had replied to the complete satisfaction of the Committee on the points raised by Sir George Buchanan.

The CHAIRMAN thought the Committee was prepared to accept the suggestions of Sir George Buchanan as to future procedure. He asked, however, that any communications circulated by the secretariat, acting on the advice of the rapporteurs of the Sub-Committees, should be sent to all the members of the Committee and that he might thus be relieved of the responsibility of deciding whether a particular document should be circulated or not. He agreed as to the extreme desirability of having early reports, but he was sure that the Medical Director had done his utmost in the matter. He thanked the Medical Director for the splendid work he had done.

The report of the Medical Director was adopted.

31. Date of the Next Session.

The CHAIRMAN said that the date of the next session would depend on the Pasteur Centenary celebrations and the meeting of the Office international at the end of May. It might be possible to hold the session of the Health Committee between the meeting of the Office international and the Pasteur celebrations.

M. VELGHE said he would enquire as to the date of the celebrations and the programme of the Office international. He would endeavour to arrange for the session of the Committee of the Office to be held at a convenient date and of Health Committee of the League of Nations.

On the proposal of Sir George BUCHANAN, a vote of thanks to the Chairman was carried with acclamation for the able way in which he had conducted the business of the session.

Annex I.

**PROPOSED COLLABORATION BETWEEN THE HEALTH COMMITTEE
AND THE UNITED STATES PUBLIC HEALTH SERVICE**

LETTER FROM Dr. MADSEN TO Dr. GUMMING:

December 1922.

Dear Doctor Cumming,

I very much regret that I was unable to go to Paris for the last meeting of the Office international and so had not the opportunity for a long discussion with you of the work of the Health Organisation of the League.

I am very grateful for all the interest you are taking in the activities of the organisation, and more particularly for the personal part you have taken in the first experiment of the interchange of public health personnel by giving an admirable lecture in Brussels.

I am very glad to learn that arrangements have been completed for Mr. Sydenstricker, the statistician of your service, to take charge of the Service of Epidemiological Intelligence and Public Health Statistics of the Health Section at Geneva.

I have also heard from Sir George Buchanan and Dr. Rajchman that you intend commissioning some of your medical officers to participate in one of the future interchanges of public health personnel in Europe, and further, that you have suggested very kindly that one of the interchanges should take place in the United States.

The Second Serological Conference has just terminated in Paris. It was, I think, most successful, and the practical results obtained in the discussions concerning meningococci and pneumococci were due very largely to the presence of Dr. Wadsworth, representing the Rockefeller Institute. The agreement reached regarding the diphtheria antitoxin and the very satisfactory conclusions concerning the tetanus unit could not have materialised without the assistance of Doctor McCoy, of your service, and I am very anxious to express to you once more my gratitude for having facilitated his collaboration with us.

I am sure I am voicing the unanimous opinion of all the members of the Health Committee in asking you whether it would be possible for you to strengthen still further the ties of your collaboration by becoming a member of the Health Committee. Our next session begins on January 8th, 1923, and I am most anxious to be able to announce to my colleagues your acceptance of this invitation. I should be glad, therefore, if you would kindly send your answer by cable, addressing it to Geneva: "Madsen Nations Geneva".

Believe me, dear Doctor Cumming,

Yours very sincerely,

(Signed) Th. MADSEN,
Chairman of the Health Committee.

Surgeon-General H. S. CUMMING,
Bureau of the Public Health Service,
Washington.

REPLY OF Dr. CUMMING TO Dr. MADSEN.

Telegram, December 31st, 1922.

Appreciate last paragraph your letter. Will gladly act in advisory and consultative capacity Health Committee League if desired. Impossible attend all meetings.

CUMMING.

Annex 2.

MEETING OF THE INTERNATIONAL COMMISSION

FIRST MEETING

Held on January 9th, 1923, at 10 a.m.

Present: The members of the Committee, together with Dr. SIEMASHKO, People's Commissary for Public Health of the Republic of the Soviets.

The Position in Russia: Statement by Dr. Siemashko.

The CHAIRMAN welcomed Dr. Siemashko and said that the Committee would be happy to hear a statement on the position in Russia.

Dr. SIEMASHKO began by saying that the presence of a People's Commissary of the Soviets at a meeting of the Health Committee need not cause any surprise, as certain newspapers had suggested, and did not change in any way the attitude of the Government of the Soviets towards the League of Nations. The Health Committee was dealing with humanitarian and not with political questions, and contained representatives of countries which were not Members of the League of Nations.

It might be claimed that the position in Russia as regards epidemics had generally improved. In 1922, there had been more than a million cases of typhus and as many cases of relapsing fever, but since the middle of the year the figures had tended to decrease progressively. Cholera had raged, above all in the famine districts, during the summer of 1922, but since July the epidemic had decreased. It might generally be said that smallpox, scarlatina and diphtheria were not widespread. On the other hand, nearly a million cases of malaria had been notified in 1922, and even in the north, in the province of Archangel, 6,000 cases had been notified as compared with 400 in 1913.

The figures for typhus furnished by Prof. Tarassevitch, according to which almost half of the population had become immune, were too optimistic. Typhus was always a menace, and the population was far from becoming immune. To get a true idea of the real position, it was necessary to multiply by 2.5 the official statistics of cases registered.

The general health situation was very serious. This was due in large part to the famine, which had struck a third of the population, and which prevailed anew in certain districts of the Ukraine, the Caucasus, the Crimea and Armenia. Bad housing conditions aggravated the situation, and the epidemics had weakened the resistance of the inhabitants. Russia still remained a centre of epidemics which might spread to neighbouring countries.

The People's Commissariat had undertaken a vigorous campaign in order to remedy the position. It exercised a control over the local administrations by means of health inspectors. According to a decree concerning the campaign against typhus, a health organisation was contemplated allowing at least one medical officer for every 50,000 inhabitants in the towns, and one medical officer and an assistant for every 200,000 inhabitants in the villages. There was in the towns an inspector of houses for every 50,000 inhabitants.

The campaign against cholera was conducted principally by means of vaccination, particularly of the soldiers. 90 per cent of the soldiers had been vaccinated, and were to be vaccinated annually. The supply of vaccine was sufficient, whereas there was a deficiency in the supply of serum. Vaccination had also been successfully employed against smallpox. Materials for disinfection were generally adequate.

The Health Congress which had been convened at Moscow in December 1922 had decided to take all the measures possible to combat epidemics and to improve the health situation. For this purpose, in spite of financial difficulties, an effort had been made to increase the number of hospitals and ambulances and to take measures against social diseases.

There were no exact statistics as regards venereal diseases, but a committee of specialists had examined 37,000 soldiers at Petrograd and 33,000 soldiers at Moscow. The result of the examination was as follows:

	<i>Petrograd</i>	<i>Moscow</i>
Syphilis	0.9 %	0.4%
Gonorrhœa	2.23%	0.7%

These figures, compared with those of previous years, showed a decrease, partly explained by the fact that the recruits examined were young.

The examination at Moscow of 1,071 students had shown that the number of cases for the two diseases taken together amounted to 15.5 per cent as compared with 22.7 per cent in 1905. Inquiries made in various regions had shown that, generally speaking, the epidemics of venereal disease were less grave than the other epidemics, but that certain villages were gravely infected.

Tuberculosis had greatly increased, above all in the famine districts. Mortality tables for Petrograd gave the following figures:

1912	34	deaths per 10,000 inhabitants.
1918	37	» » » »
1920	51	» » » »
1921	36	» » » »

It should be noted that demographical statistics were being reorganised. The registration of births and deaths had been compiled under the old regime by the Church, but since the separation of Church and State a general statistical service had taken charge of the work. The last census of the population, taken on August 28th, 1920, showed that the population of Russia in Europe had decreased by 13 per cent, and that of Russia in Asia by 3 per cent.

In order to combat venereal diseases and tuberculosis, dispensaries had been constituted in each government town and in some of the smaller towns. Associations had been organised to assist in the work of each dispensary, and propaganda weeks were periodically organised. The Congress of December 1922 had taken steps to register diseases, but the results had not been very considerable so far. Thirty-two stations had been set up to deal with malaria, particularly in the Caucasus and Turkestan. Health missions had been organised, as well as special courses for doctors. Purchases were made yearly, particularly in Germany, of instruments and drugs, particularly of quinine. Two million gold roubles had been expended.

Particular attention was paid to the protection of mothers and infant children. The new legislation on the subject ensured for women workers eight weeks' leave before and after childbirth and six weeks for women working in offices. In Russia (excluding the Ukraine) and in Siberia, 580 crèches had been opened with accommodation for 27,000 children. They provided for only 3.3 per cent of the requirements of the country. Consultations had been organised corresponding to 10 per cent of the requirements. There were 136 children's homes, which represented only 3.2 per cent of what was necessary. The infant mortality tables at Moscow for children up to twelve months gave the following figures:

1914	27.9	per 100 births
1915	30.3	» » »
1916	34.2	» » »
1917	35.4	» » »
1918	27.8	» » »
1919	33	» » »
1920	22.5	» » »
1921	26.5	» » »

The birth-rate statistics for Moscow gave the following figures:

1914	31	per 1,000 inhabitants
1915	26.9	» » »
1916	22.8	» » »
1917	19.5	» » »
1918	14.8	» » »
1919	17.4	» » »
1920	22.1	» » »
1921	30.2	» » »

In order to protect older children, the Commissariat of Public Health was endeavouring to develop physical culture. There was at Moscow a Central Institute of Physical Culture, which trained instructors for factories and workshops. Three-month courses were given. For instructors in schools, courses of three years were organised. Exercises were compulsory in the province in schools and barracks.

There was in Russia a large number of abandoned children who had been collected and housed

At Moscow	1,045	children
In Russia	13,170	» (physically and morally abnormal)
»	811,000	» (placed in educational institutes).

The situation, as will be seen from this statement, was grave. Commerce and agriculture were only gradually recovering after a period of famine which had attacked a third of the population of European Russia. The Commissariat of Public Health, which was only a central administrative body, hoped to succeed in its task with the assistance of the health institutions of other countries acting for the welfare of Russia and of humanity.

The CHAIRMAN, on behalf of the Committee, thanked Dr. Siemashko for his statement.

Professor Léon BERNARD asked what measures had been taken against alcoholism.

Dr. SIEMASHKO said that it had been necessary to make concessions for financial reasons. Wine with an alcoholic content of more than 18 degrees was prohibited. Energetic measures were taken for the suppression of "samagonka", which the peasants distilled at home. Police measures had been taken, and assistance was rendered by industrial and health organisations. Brandy was only sold on the prescription of a doctor.

M. VELGHE asked whether the decrease in the epidemic diseases registered during the last months in the statistical tables which have been shown may be attributed to a prohibition by decree of migration of the population.

Dr. SIEMASHKO said that the decrease in the movement of the population had certainly checked the propagation of epidemics, but that in this field, decrees could not have a very great effect, above all in times of famine. A decree prohibiting such movements would as a result lead to the creation at particular points, in railway stations for example, of centres of infection. It was better to regulate these movements than to prohibit them, and it was for this purpose that 10,000 beds had been organised along the railways.

Dr. LUTRARIO asked whether in the struggle against malaria, pure quinine alone was employed, or else the secondary alkaloids of quinquina such as chinchonin, which had given excellent results in Italy; what were the seasonal variations of malaria has broken out in the cold districts of Northern Russia—whether the extension of extra-genital syphilis is still as great as it was stated to be in medical literature, and whether prostitutes were submitted to an obligatory medical examination.

Dr. SIEMASHKO replied that quinine was almost exclusively used. The question of substitutes was being studied by specialists who would derive advantages from the courses organised by the League of Nations. There was a decrease of malaria in the winter. Extra-genital syphilis was more widespread than other forms, above all among the peasants. Prostitutes were not submitted to a compulsory examination, but the professional women were segregated.

Sir George BUCHANAN asked whether, in order to compare usefully the statistics of infectious diseases, it would be possible to determine the number of deaths for a particular disease or the total number of deaths in a given region.

Dr. SIEMASHKO said it was difficult to make comparisons owing to the large number of provinces. Mortality tables were not yet very satisfactory. For this reason it was only possible to give figures for certain towns.

Dr. CHODZKO drew attention to the statement that Russia remained a centre of epidemics which threatened Poland and Europe. He asked Dr. Siemashko to give still further details regarding the campaign against epidemics, the number of beds for epidemic diseases which are available, the quarantine stations, the institutes of bacteriology, the organisation of 32 stations to deal with malaria, and the general programme of the campaign against epidemics.

Dr. SIEMASHKO replied that the Health Organisation comprised 30,000 beds for epidemic diseases in addition to 10,000 beds constituted for the railways. There were isolation stations in each important railway station and an institute of bacteriology in every capital city of a province. Medical officers were not dependent on the Commissariat at Moscow, but were paid by the Commissariat. They were responsible to local bodies of the central administration, and the Moscow Commissariat exercised its control by means of health inspectors. The stations to deal with malaria were making enquiries in order to determine the places of origin and the forms of the disease with a view to its suppression. The stations were organising exhibits and conferences. In each station there was a laboratory, a dispensary and often a hospital.

Dr. RAJCHMAN observed that the Russian Delegation had said at the European Health Conference at Warsaw in March 1922 that there were 70,000 beds for epidemic diseases, and in an official report it was stated that there were 75,000 beds. According to the figures of Dr. Siemashko, there had been a considerable decrease.

Dr. SIEMASHKO replied that the number of beds varied according to the gravity of the epidemics, and that at the present moment 30,000 beds were sufficient.

The programme for 1923 contemplated the organisation of enquiries, strong propaganda in the Press, inspection of homes, houses and persons, the free distribution or cheap sale of hot water and soap, the organisation of night shelters, the organisation of beds for epidemic diseases, a close collaboration with the railway organisations, and the constitution of extraordinary local commissions, etc.

Replying to a question of the Chairman, Dr. Siemashko said that the situation was much the same in the west and east of Russia, and that the movements of the population across the frontier had greatly diminished.

SECOND MEETING

Held on January 10th, 1923, at 10 a.m.

All the members who attended the previous meeting were present, together with Dr. Siemashko, People's Commissary for Public Health at Moscow.

Position in Russia (*Continuation*).

The CHAIRMAN asked Dr. Siemashko if he could add to the interesting information which he had furnished regarding Russia certain details of a practical character concerning the assistance which might be afforded to his country if occasion permitted.

Dr. SIEMASHKO said that the chief problem was to check the progress of the epidemics. It was in this field that assistance would be particularly useful. There was no lack of means of disinfection and of vaccine, but there was, on the other hand, a shortage of drugs, laboratory apparatus and anti-diphtheria serum.

Assistance would also be welcomed in the campaign against infant mortality, and there was a lack of quinine for the campaign against malaria. There was also a shortage of bedding, of absorbent lint and soap.

The CHAIRMAN thanked Dr. Siemashko, and expressed the hope that it would be possible to meet these requirements to a certain extent.

Prof. NOCHT asked whether vaccination against typhus had been tried on an extensive scale and by what method.

Dr. SIEMASHKO replied that different methods had been employed without any very great success.

M. VELGHE asked to what degree it would be possible to develop and reinforce, with the assistance of the Soviet Government, the activities of the agencies of the Epidemic Commission and of the philanthropic organisations that work in Russia.

Dr. SIEMASHKO said that Russia was very grateful for the help afforded her in foodstuffs and drugs by the charitable organisations and the Red Cross. It was necessary that foreign assistance should be rendered by collaboration with the Russian organisations in their daily work, and it would be very useful to organise this assistance systematically.

The office of Dr. Nansen organised dispensaries in certain regions for fixed periods. Each charitable organisation might devote itself to a specific task such as the protection of children, the campaign against tuberculosis, etc. In this way the Government might draw up its programme knowing on what assistance it might rely.

M. VELGHE asked what was the position of the agencies of the Epidemic Commission.

Dr. SIEMASHKO replied that they were collaborating closely with the Government and giving entire satisfaction.

THIRD MEETING

Held on January 13th 1923, at noon.

All the Members of the Health Committee (except Prof. Léon Bernard) and Dr. SIEMASHKO, People's Commissary for Public Health, Moscow, attended.

Anti-Dysentery Vaccination in Russia.

The CHAIRMAN invited Dr. Siemashko to inform the Committee of the experiments made in Russia in the method of vaccination *per os*.

Dr. SIEMASHKO said that this method had been tried in Russia with favourable results. Dr. Tarassevitch had received the vaccine from the Pasteur Institute and had issued two reports.

The vaccine had been tried in the first instance on the medical staff. The cases numbered several hundred. There had been no case of infection among those vaccinated, and the results of the vaccination on the health of the persons vaccinated had not been more serious than those observed under the ordinary method. It had been decided to continue the experiments on a more extensive scale.

He had drafted a letter to the Chairman of the Health Committee recording this decision and expressing the hope that the experiments might be conducted in correspondence with the Pasteur Institute and with the collaboration of an expert appointed by the Health Committee (see Appendix).

The CHAIRMAN thanked Dr. Siemashko for his information, It was most desirable to have further experiments and to appreciate the results. He congratulated Dr. Siemashko on having secured for this experiment the service of medical men whose qualifications were widely known and respected. It was necessary that these experiments should be carried out in accordance with a definite programme and that the results should be carefully controlled.

M. VELGHE said that the Committee was happy to accept the proposal of Dr. Siemashko. He enquired whether, pending definite final results, it would be possible for the experts to give some indications as to the success or failure of the experiment at the next session of the Health Committee.

The CHAIRMAN suggested that Sir William Leishman should be appointed as expert to decide on the conditions of the experiments and to control their results. If Sir William Leishman were unable to accept the invitation, the Committee might authorise him to appoint someone else in consultation with the Medical Director. It would perhaps be necessary for the expert appointed to go to the spot, or at least to confer with Dr. Tarassevitch and Dr. Siemashko.

Dr. SIEMASHKO said that a liquid vaccine for vaccination *per os* was being prepared at Moscow, but that he would prefer the use of the vaccine of the Pasteur Institute. The latter vaccine, however, was expensive, and he would ask whether it would be possible for assistance to be given in procuring an adequate supply.

The CHAIRMAN did not think there would be any difficulty in arranging for an adequate supply of vaccine.

In conclusion, he thanked Dr. Siemashko on behalf of the Committee.

APPENDIX TO ANNEX 2.

VACCINATION "PER OS"

(Letter from Dr. Siemashko to the Chairman of the Health Committee.)

GENEVA, January 12th, 1922.

Sir,

With reference to the discussion which took place yesterday at the meeting of the Health Committee of the League of Nations on the problem of vaccination through the mouth, I beg to inform you that the People's Commissariat for Public Health of the R.S.F.S.R. is now engaged in a series of experiments on a very large scale, with vaccines against dysentery, cholera and typhoid fever.

This work was begun under the direction of Professor Tarassevitch and Professor Zabolotny. The work will be carried on in close touch with the Pasteur Institute.

I beg to state that my Commissariat would be glad if the International Commission would care to appoint an expert to observe this work after previous consultation with me.

I have the honour to be, Sir, etc.,

(Signed) N. SIEMASHKO,

People's Commissary for Public Health of the R.S.F.S.R.

The Chairman of the Health Committee
of the League of Nations,
Geneva.

Annex 3.

THE REPORT OF THE MEDICAL DIRECTOR.

I. THE RESOLUTIONS OF THE COUNCIL CONCERNING THE WORK OF THE HEALTH COMMITTEE.

The resolutions adopted by the Health Committee during its fourth session were presented for the approval of the Council at its meeting of September 2nd, 1922.

The Council approved without comment the report on the work of the fourth session of the Health Committee, and has therefore given its sanction to the proposals brought forward by the Committee.

Four points, however, mentioned in M. Hanotiaux's report to the Council received special attention.

(a) This report referred once more to the negotiations with the International Health Board of the Rockefeller Foundation and expressed satisfaction that the Health Committee had drawn up a programme of the work to be undertaken with the grants from the Foundation. The Council recognised that this programme was purely technical and took note of the correspondence brought it at the July meeting. The Council adopted the following resolution:

"The Council, at its meeting held on July 20th, 1922, invited the Health Committee to consider the employment and administration of the funds placed at its disposal by the Rockefeller Foundation for the purposes proposed by this Foundation. It noted the draft agreement drawn up by the Health Committee for the purpose of developing the epidemiological intelligence service and of instituting an interchange of public health officials between various countries, in agreement with the several Governments and in accordance with the conditions laid down in the correspondence with the Rockefeller Foundation.

"The Council therefore authorises the Secretary-General to sign this agreement and requests him to pay particular attention to the carrying out of Article 4, which provides that the Rockefeller Foundation shall be kept informed of the execution of the programme prepared in agreement with it.

"The Council once more expresses its gratitude to the Rockefeller Foundation for its generous support to one of the essential branches of the work of the League of Nations."

(b) The Council has expressed its agreement with the views of the Health Committee, *i.e.*, that it would have been quite impossible to obtain a grant from the Rockefeller Foundation unless the latter had been convinced that the League itself took a deep interest in carrying out the programme drawn up by common agreement. In sanctioning the Committee's proposal for the maintenance of credits in the budget of the Health Organisation to be applied to the interchange of public health personnel and to the epidemiological service respectively, the Council has adopted the principle that a general information service should be maintained by the Health Organisation in order to enable it to follow the progress of epidemics throughout the world and so select the problems on which to concentrate its attention. In the view of the Council, the contribution from the Foundation will allow of extension and improvement in the organisation of the service already existing for this purpose.

(c) The special recommendations of the Health Committee concerning the work of the Epidemic Commission were considered very fully in the Council's report. A letter (Appendix 1) was addressed by the President of the Council to the chief delegates of the States Members of the League represented at the Third Assembly. The Council decided not to issue a further public appeal in view of the meagre response during the last year, but the attention of the delegates was drawn to the findings of the Warsaw European Health Conference, to the decision taken by the Powers at Genoa, and to the repeated warnings of the Health Committee. The delegates were placed in possession of the facts and were invited to request their Governments, with whom the ultimate responsibility rests, to take a definite decision in the matter.

The members of the Health Committee will remember that they have also referred to the Council a question of principle. They proposed that a special credit on behalf of the Epidemic Commission should be placed on the budget of the League of Nations under the Permanent Health Organisation. On the understanding that the credit will be used for the collection of all information on the spread of epidemics, the Council has accepted this recommendation.

(d) The Council also considered the question of the despatch of a Commission of Epidemiological Enquiry to the Far East. It decided to sanction this proposal and accepted the view of the Committee that the credit should not exceed 30,000 francs. In coming to this decision, it took into consideration the fact that the spread of epidemics in the Far East is of very great interest to the Asiatic Members of the League of Nations, and that the health conditions of that part of the world must be a matter of concern to other regions. It expressed the hope that the enquiry would contribute to the adoption of useful preventive measures which might perhaps in the future allow of more complete co-ordination of information on public health.

II. DECISIONS OF THE THIRD ASSEMBLY CONCERNING THE WORK OF THE HEALTH ORGANISATION.

I. The members of the Health Committee will remember that the constitution of the provisional Health Committee was approved by the Second Assembly in September 1921. The Assembly reserved the right, however, to control the constitution of all the permanent committees of the League and gave its final approval subject to the consideration of a report on the work of the Committee to be presented to the Third Assembly. The work of the Health Organisation was discussed at several meetings of the Second Committee of the Third Assembly, whose proposals were embodied in a report followed by three resolutions which were adopted unanimously by the Assembly. I had the honour to circulate to the members of the Committee this very full report, presented by M. Manuel Rivas-Vicuna, the present Prime Minister of the Republic of Chile. His impartial presentation of your work carried conviction to all the members of the Assembly Committee which dealt with the Technical Organisations. The Health Committee will be interested to know that this Committee was presided over by Dr. Chodzko.

The Assembly expressed its satisfaction with the work of the Health Organisation in the following terms:

I. The Assembly notes with satisfaction:

(a) The assistance given by the Health Organisation to the work of the Health Conference at Warsaw. It notes also that the Genoa Conference, having considered the report of the Warsaw Conference in accordance with the request contained in the resolution of the Council forwarded on April 3rd, 1922, approved the principles of the anti-epidemic campaign adopted by the Warsaw Conference, and that in consequence of this resolution of the Genoa Conference, transmitted to the Health Organisation by a resolution of the Council dated July 21st, 1922, the Health Organisation has been charged with the duty of carrying out the programme outlined by the Conference;

(b) That the Health Organisation has been authorised by various countries to undertake the duties of mediation entrusted to it by certain bilateral sanitary conventions which have been concluded as a result of the Warsaw Conference, and that the Council has approved the discharge of these duties;

(c) The co-operation established between the Health Organisation and the other Technical Organisations of the League of Nations, notably the Permanent Advisory Committee on the Traffic in Opium, the Advisory and Technical Committee on Communications and Transit, and the Permanent Mandates Commission;

(d) The assistance given by the Health Organisation in the work preparatory to the revision of the International Sanitary Convention of 1912, the co-operation with the Office international d'Hygiène publique thus effected, and the fact that the Council has decided to place the Health Organisation at the disposal of the Conference which is shortly to be convened by the "Office international d'Hygiène publique";

(e) The co-operation effected by the Health Organisation in experimental research concerning the standardisation of sera and serological tests, the first results of which will be presented to a conference to be convened at Geneva in the near future;

(f) The development of the activities of the Health Organisation with regard to epidemiological intelligence, which should not be limited to problems which are of importance to only a limited number of countries;

(g) The initiative taken by the Health Organisation with regard to an interchange of the sanitary personnel of various Governments, which it desires should be made applicable to as large a number of countries as possible.

II. The Assembly desires to express its appreciation to the Rockefeller Foundation for the financial assistance which has been offered to the Health Organisation to assist in the development of certain of its activities.

Having sanctioned the work of the Health Organisation during the year 1922 and the proposed programme for its future activities, the Assembly recognised that the Health Organisation was undertaking a task of permanent utility and decided that it was essential that it should continue this work.

In other words, it is now officially determined by the League that the Health Organisation is to form a permanent part of the normal work of the League, but the exact manner in which the Health Organisation is to be constituted on a permanent basis remains to be determined at a later date.

On this subject the Assembly took the following resolutions:

The Assembly considers that the Health Organisation of the League of Nations is undertaking a task of permanent utility and that it is indispensable that it should continue its activities.

The Assembly considers that it may be possible, before the meeting of the Fourth Assembly, to prepare, on the basis and according to the principles adopted by the First Assembly for the Technical Organisations of the League, the constitution of a Permanent Health Organisation, which will be submitted to the Fourth Assembly for approval. This Organisation will undertake the duties laid down in the resolutions of the First and the Second Assemblies. It may, if necessary, function meanwhile within the limits of the budget and in anticipation of the above-mentioned approval of the Fourth Assembly.

To this end the Assembly authorises the Council to take advantage of such general sanitary conferences as may be convoked, it being understood that all States Members of the League of Nations shall be invited to send delegates thereto.

It also suggests to the Council that an attempt be made at the forthcoming conferences to make such arrangements as may be necessary to avoid duplication.

2. While deciding that the work of the Health Organisation should be placed on a permanent basis, the Assembly insisted rather strongly on the temporary character of the Epidemic Commission in so far as the anti-epidemic campaign in Eastern Europe was concerned.

After a very long discussion in its Financial Fourth Committee, the Assembly decided to reduce to 50,000 francs the credit originally placed at the figure of 125,000 francs by the Health Committee for epidemiological enquiries and for a closer co-operation of the technical sanitary administrations. It was clearly understood by both Committees of the League that the epidemic campaign should cease work in so far as the campaign against epidemics was concerned as soon as the emergency is over, but that the enquiries and the co-operation should be carried out by the Permanent Health Organisation. In order to give effect to its decisions, the Assembly, in its second and third resolutions, certified the Epidemic Commission as a temporary commission.

The discussions in the Committees were at times difficult, and your past work was most ably defended and your future programme most clearly explained by M. Velghe, to whom we owe a real debt of gratitude for his help and assistance.

3. I regret to have to inform the members of the Committee that the budget of the Organisation was appreciably reduced by the Assembly. It was not realised by many members of the Financial Committee that the increase in the budget for 1923 as compared with 1922 was due to the fact that the estimates for the previous year had necessarily no actual experience behind it and represented mere guesswork. Proposals were made during the debate to cut down the budget by 500,000 francs, but, under the circumstances, I think you may accept the final reductions introduced into your budget as not very seriously affecting the programme of work traced by you for the coming year. The item for epidemiological intelligence was reduced from 40,000 francs to 25,000 francs; the item for miscellaneous expenses was omitted altogether; the credit of 100,000 francs for a system of liaison was reduced from 100,000 to 50,000 francs, and, as previously mentioned, the grant for the Epidemic Commission was brought down to 50,000 francs instead of the proposed 125,000 francs. The total budget for 1923 amounts to 700,500 gold francs as against 392,125 for the year 1922.

		1923 1 Gold Franc = 1 Sw. Fr.	1922 1 Gold Franc = 1.06 Sw. Fr.
		Gold Francs	
BUDGET			
INTERNATIONAL HEALTH ORGANISATION		700,500	392,125
I. Secretariat.			
1. Staff.			
(a) Salaries of Permanent Staff		160,600	178,500
Medical Director	46,500		
Asst. Med. Director	31,500		
Member of Section, Class A	25,200		
Technical Officer	25,200		
Secretary of Section	12,000		
2 Asst. Secs. and Stenographers	20,200		
(b) Temporary Staff of Secretariat		92,400	—
Draftsman, Technical Clerks	32,000		
4 Members of Section	60,400		
(c) Travelling and removal expenses of Secretariat		31,500	31,500
2. Publications and Scientific Works:			
(a) Printing, publishing, etc.		15,000	23,625
(b) Epidemiological Intelligence.		25,000	—
(c) Sanitary notifications and notifications in case of epidemics. Cables, tleegrams, etc.		21,000	21,000
3. Unforeseen expenses		5,000	11,500

1923	1922
1 Gold Franc = 1 Sw. Fr.	1 Gold Franc = 1.06 Sw. Fr.
Gold Francs	

II. Health Committee and Conferences.

1. Sessions of Health Committee	50,000	63,000
2. Special Enquiries and Investigations (this includes expenses of technical sub-committees appointed by Health Committee)	150,000	63,000
3. Technical Conferences of Government representatives or experts to prepare international sanitary measures	50,000	—
4. Expenses in connection with a system of liaison between the various national public health services	50,000	—
III. Epidemic Commission (grant for epidemiological enquiries, etc.)	50,000	—

III. AGREEMENT WITH THE ROCKEFELLER FOUNDATION.

(1) In conformity with the Resolution of the Council of September 2nd, the Secretary-General has signed an agreement with the Rockefeller Foundation in the terms submitted by the Health Committee (Annex 5 (b), A. B., of the meeting of the fourth session of the Committee, C. 555. M. 337. 1922. III). Two minor changes were, however, subsequently introduced at the request of the Executive Committee of the International Health Board:

In paragraph 1 of the agreement, it is suggested that the phrase "acting through the Executive Committee of" be changed to "on behalf of". The section would then read:

"This Agreement is made between the League of Nations, acting through its Secretary-General, on the one hand, and the Rockefeller Foundation, on behalf of the International Health Board, on the other hand, for the maintenance of an international interchange of public health personnel on an international scale."

(2) At the end of paragraph 7 of the agreement the addition of the following sentence is proposed: "That unexpended balance over and above outstanding obligations at the end of each year shall revert to the Rockefeller Foundation."

This applies to both agreements.

(3) In accordance with the desire of the Health Committee I have asked the International Health Board whether, in its view, the funds supplied for the interchange of public health personnel could be used for interchange on an individual basis. The following reply has been received:

"In response to your previous request as to whether or not some of the funds supplied by the International Health Board of the Rockefeller Foundation to the League of Nations could be used for granting of occasional travelling fellowships for individual study, I beg to state that this seems to us to be entirely in keeping with the understanding between the League of Nations and the International Health Board, and is heartily approved."

(4) A memorandum concerning the appointment of Mr. Edgar Sydenstricker as Chief of the Service of Epidemiological Intelligence and Public Health Statistics, which I had the honour to circulate to all the members of the Health Committee, has been forwarded also to Dr. Wickliffe Rose, Director of the International Health Board.

Dr. Rose called my attention to the fact that in my memorandum I stated that the selection was approved by Surgeon-General H. S. Cumming and by him. In referring to his correspondence with me, Dr. Rose observed that in giving me information concerning Mr. Sydenstricker he had taken pains to explain that he was not recommending him and that he was only transmitting information concerning him, and he could not accept the statement that Mr. Sydenstricker's appointment had been approved by him.

Dr. Rose added that, in his opinion, it is highly important that the General-Director of the International Health Board should refrain from approving or disapproving any appointment made by the Health Organisation of the League. It is a fundamental matter of policy that his Board should have no views in determining the Health Organisation's policy or programmes or any details of its administration. His Board is interested in keeping in close touch with our service with a view to ascertaining how the Board may be serviceable and with a view to keeping advised as to all the expenditure made by the Board. He wished, therefore, to make it clear to me that the Board is refraining from giving any views on such details as the appointment of personnel and he hoped that this point would be made quite clear to the members of the Health Committee.

I much regret to have used an expression which was susceptible of misunderstanding. The point of view set forth in Dr. Wickliffe Rose's letter will, I am sure, be very welcome to the members of the Health Committee, as it conforms to the spirit in which the Committee has welcomed the co-operation of the Rockefeller Foundation.

(5) This point of view is further explained in a letter replying to the enquiry made on behalf of the Health Committee as to whether the expenses of the Temporary Commission of Enquiry

to the Far East might not be in part supported out of the Rockefeller grant. The attitude of the International Health Board was stated in this letter as follows:

"1. The Board has contributed towards the League's budget for the maintenance of its Epidemiological Service.

"2. As we understood it, this contribution by the Board is not to be segregated, a fund has been set aside for the purpose of this Epidemiological Service; towards that fund the League is contributing and the Board is contributing; the fund is to be treated as a unit.

"3. It is our opinion that it would not be advisable to consider the contributions by the Board as in any sense a separate element in the budget. The fund should be treated as one.

"4. It should not be possible for anyone to say that the part of the budget which the League had supplied has been devoted to a given purpose and the part which the Board had supplied been devoted to another purpose."

"On the basis of the above principles you will see that there is no objection on our part to the expenditure of a certain portion of the monies to be supplied by the Board for the purposes of the Epidemiological Commission to the Far East. Dr. Rose, in his letter to me, concludes as follows:

"You and Dr. Rajchman are in a position to know when this fund, provided by the League and the Board, is being expended for the purposes for which it is set aside."

I believe the attitude of the International Health Board may be rightly summed up by stating that they would not like anyone to think that they are assuming the right to participate in the discussions of the Health Committee because they have made a contribution towards its work.

IV. THE EXPERT COMMITTEE ON DISEASES OF EQUATORIAL AFRICA.

The Health Committee will probably remember that it decided to invite three experts on tropical medicine from Belgium, France and Great Britain respectively to undertake an enquiry regarding the spread of sleeping sickness and tuberculosis among the native population of Equatorial Africa.

Of the three experts named in the resolution of the Committee, Dr. Andrew Baltour and Dr. van Campenhout have accepted the invitation, but as it was impossible to secure the co-operation of Professor Brumpt of Paris, who was absent, Professor Gustave Martin was approached on the advice of Professor Calmette and Professor Léon Bernard. After he had accepted the invitation, a meeting was held in London on November 10th and 11th, of which Dr. Andrew Balfour was elected Chairman. The Committee has addressed a number of letters of enquiry to the following administrations:

Conseil Supérieur de Santé des Colonies, Paris;
The Ministry for Foreign Affairs, London;
Conseil Royal de la Santé Publique, Madrid;
Département de l'Hygiène au Ministère de l'Intérieur, Rome;
Service de Santé et de l'Hygiène, Bruxelles;
Ministère de la Santé Publique, Lisbon;
Colonial Office, London;
Central Sanitary Board, Khartoum.

The Committee decided not to limit its enquiry to the consideration of answers received from official sources. In fact, it attaches greater value to intelligence which it will obtain from private correspondence and the study of sources of reference. The Chairman and Dr. Bagshawe have been steadily collecting information, on the basis of which they are now undertaking further official enquiry. Their labours have not yet reached a stage which would allow them to submit an interim report to the Health Committee.

V. SERVICE OF EPIDEMIOLOGICAL INTELLIGENCE AND PUBLIC HEALTH STATISTICS.

I had the honour to circulate to all the members of the Committee a note, informing them of the appointment of Mr. Edgar Sydenstricker and of the programme of work sketched for the service during the first part of 1923. I had hoped that the new Chief of the Service would be able to develop his plans before the Committee meeting, but unfortunately he was prevented at the last moment from sailing in time to enable him to attend the session. He is not expected to arrive in Geneva before January 20th.

It is, I think, now agreed that the first efforts in the development of the Service must be more or less tentative and experimental. I believe I am right in stating that the International Health Board was interested in co-operating in establishing this Epidemiological Intelligence

Service on a sound basis. The period of five years during which the contribution of the Board will be continued, may, it is hoped, be sufficiently long to demonstrate to Governments that the work is not only useful but indispensable, so that funds will be found for its continuance and further development. If it is to be of real use to the Board and to the Council, it is necessary that the Health Committee should be given great latitude in carrying out the new undertaking. It must not be forgotten, however, that the Resolution of the Council referred to in the first part of this report emphasises the point that the funds provided by the International Health Board should be used for the purpose for which they were contributed, *i.e.*, to aid the Health Organisation in developing the services in question. The segregation of funds provided for in the agreement cannot be objected to as a matter of book-keeping. It is obvious that the funds provided by the Board and the credits provided in the budget of the League will both be used for purposes which contribute directly towards establishing the Service. Serious difficulties would arise if the Board's funds were used for scientific investigations while the League's credits were employed for the service of supplying epidemiological intelligence to public health administrations.

VI. INTERCHANGE OF PUBLIC HEALTH PERSONNEL.

M. Velghe will present to the Committee his views on the results of the first experiment in interchange and will also make proposals which will form the basis for discussion and for the decisions of the Committee.

May I say here that the first experiment has proved successful? The members will be able to judge from reports and conferences given during the interchange, both in Belgium and Italy, of the number of problems dealt with and of the very expert manner in which the subject was treated. It is a particularly hopeful sign that one of the addresses was given by Surgeon-General Cumming, who has declared his willingness to participate in future interchanges both by suggesting the organisation of a course in the United States and by his decision to commission medical officers of his service to take part in the next interchange held in Europe.

The International Health Board has transmitted its first quarterly contribution of 15,000 dollars in time for the financing of the first interchange. The total expenditure amounted to some 13,000 dollars. The Committee will remember that the expenditure involved: (a) the payment of subsistence allowance of £1 a day to all the 23 medical officers taking part in the experiment; (b) reimbursement of their travelling expenses (2nd-class fare during the day, 1st class and sleeping accommodation during the night); (c) lecturers' fees, hire of lecture-halls, etc.; (d) railway and motor expenses in organised tours of inspection; (e) administrative expenses (interpreters, shorthand-writers, documentation, etc.).

The ratio of expenditure incurred and subsistence allowance as compared with that of items (b) to (c) must obviously vary in the countries visited. In addition to individual differences due to local customs, etc., the distances to be travelled must be taken into account. It was difficult in the first experiment to lay down very fast rules, and the question of expense incurred was very largely left to the sanitary administrations of the two countries. The ratio mentioned above was 33 % for Belgium and 61 % for Italy, and for future estimates, a mean of 50 % might be taken as an approximate basis.

The daily allowance of 20/- was found ample in the three countries visited (Belgium, Italy and Poland), while a supplement had to be granted for the officer who went to Holland for his practical course. If the next interchange were organised in England, it would be necessary, according to the advice of the British medical officers, to increase the allowance to 30/- per day. Calculated on this basis, the expenditure for the three months' interchange, of which six weeks would be taken in England and six weeks on the Continent, would total between 20,000 and 28,000 dollars if the number of medical officers taking part varied between 25 and 34.

It was generally agreed by the first batch of medical officers, as well as by the Belgian and Italian sanitary administrations, that it would not be practicable to exceed that number.

The next interchange cannot start before the latter part of February, and thus, to the balance of some 2,000 dollars remaining, 7,500 dollars should be added as "economy" for the first six weeks of 1923. This, together with the quarterly sum of 15,000 dollars, would cover the estimated expenses of the second interchange.

In conformity with the Committee's recommendation, I have undertaken to start negotiations at once with a view to future experiments. The German Health Administration would be ready to organise an interchange in the late spring. The Austrian Health Department is prepared to organise an interchange on a four-to six-weeks basis at the end of February or the beginning of March of this year. I am particularly grateful to Sir George Buchanan for his offer to ask the Society of Medical Officers of Health of England if they would be prepared to take in hand the organisation of each interchange and I am very glad indeed to be able to inform the Committee that I was invited by Sir George to explain to Delegates on the Council in London the plans for such an interchange, in England. The representative of this society attended the closing conference of the first interchange, and we discussed with him very fully all the plans for the second interchange. It may be arranged in the early spring. After six weeks spent in England, a similar period would be taken in one of the two Central European countries.

It may not be practicable to arrange a second interchange in Europe during the coming year. The Assembly has insisted on making the system applicable to as great a number of countries as possible, and we have taken steps to get into touch with the South American States.

A letter has been addressed by the Secretary-General to the following States:

Argentina	Paraguay
Bolivia	Peru
Brazil	Uruguay
Chile	Venezuela
Colombia	

enquiring whether their Governments are interested in the scheme (Appendix 2).

I have addressed a letter, Appendix 3 to the Public Health Administrations of the following countries, asking them to inform the Health Committee whether they would be willing to participate in such an exchange:

Austria	Italy
Belgium	Norway
Canada	Poland
Czechoslovakia	Roumania
Denmark	Russia
Finland	Kingdom of the Serbs, Croats and Slovenes
France	Sweden
Greece	United States
Hungary	

If all the invitations were accepted, the number of medical officers would be twenty-seven.

The Committee may wish to accept the invitation of Surgeon-General Cumming, and it may be possible to arrange the third collective interchanges in America.

Exchanges for individual study and for special objects could be financed from the remainder of the credit at the disposal of the Committee.

A credit of 50,000 francs out of the general budget of the Health Committee of the League may be drawn upon for the purposes of the interchange. It is important to emphasise the temporary nature of the contribution made by the International Health Board, which decided to aid the Health Committee during the first stages of its undertaking.

The Committee, however, should not assume that the Board will renew its contribution automatically. I believe I am right in stating that the Board is interested in this proposal as a means of creating international understanding and goodwill as a basis for effective co-operation in maintaining the Service of Epidemiological Intelligence of the Health Organisation. If I am not mistaken, its view was that the interchange would be valuable also as a means of educating sanitary personnel for each of the countries taking part, but it cannot be expected that the Board's contribution will be continued indefinitely.

It is desirable that the money found for the interchange should be considered as grants supplementing the credit at the disposal of the various health administrations for this purpose, or at least of the League funds in the estimates of the Health Organisation.

VII. FAR-EASTERN COMMISSION OF EPIDEMIOLOGICAL ENQUIRY

A special sub-committee drew up the instructions for the Commission and made proposals to the Chairman of the Health Committee for the nomination of its personnel. Dr. Norman White was ultimately appointed to this Commission. Dr. Norman White attended the League of Red Cross Societies Conference in Bangkok and is at present engaged in an enquiry at Singapore. The Surgeon-General of the United States Public Health Service is commissioning one of his expert officers so far as possible to follow the same itinerary as Dr. Norman White and collaborate with him, but while Dr. Norman White will report to your Committee, the American officer will present his observations to his sanitary administration.

VIII. THE SUB-COMMITTEES FOR TRANSPORT BY WATER AND MIXED SUB-COMMITTEE OF THE HEALTH AND OPIUM SECTIONS

The special sub-committees appointed to study the requirements for the legitimate consumption of opium and for health regulations for waterways will meet in a few days and may present an interim report before the end of this session to the Committee. Any decision arising out of the recommendations may have to be referred to the next session of the Committee.

IX. COURSE FOR PUBLIC HEALTH PERSONNEL AND THE ESTABLISHMENT OF ANTI-EPIDEMIC MUSEUMS

The Committee will be glad to learn that the sanitary courses which were to be organised in accordance with the recommendation of the Warsaw European Sanitary Conference have been held in Warsaw, Moscow and Kharkow. 67 medical officers attended the courses in Warsaw which began on November 20th and closed at the end of December. In addition to lecturers

drawn from the Polish public health services, three foreign experts gave the benefit of their experience. Professor Cantacuzène lectured on the epidemiology of diseases prevalent in Roumania, Colonel Liston gave a demonstration of his method of delousing by the use of cyanide acid, while Professor Abel explained the methods of anti-epidemic campaign practised in Germany. Professor Abel repeated his course of lectures in Moscow and Kharkow. The courses in Moscow, which are continuing are of longer duration. At the course at Kharkow, where 65 medical officers attended, it was found necessary to provide the officers with parcels of food in order to enable them to take full advantage of the arrangement.

Work is still being carried on towards the establishment of the anti-epidemic museums, but the arrangements have not yet reached a final stage. Of the £5,000 which were placed at the disposal of the Committee for the purpose, £1,816 has been spent, leaving a balance of £3,184 for the repetition of the courses and the establishment of the museums.

X. SEROLOGICAL CONFERENCES

The Committee is aware that, at the invitation of the Chairman, the Sub-Committee on Diphtheria and Tetanus held a meeting in Geneva from September 25th to 27th. The Chairman is reporting fully to the Committee on the result of this very successful meeting.

He is also giving a detailed account of the Second International Conference on the Standardisation of Sera and Serological Tests, which was convened by him on behalf of the Committee and held at the Pasteur Institute in Paris from November 20th to 26th.

The research institutes engaged at your invitation in investigations on the standardisation of sera and the sero-diagnosis of syphilis presented to the Paris Conference very full reports embodying their experimental enquiries. The thirty-three very technical reports represent a most valuable scientific contribution, and it is clearly in the interests of the Health Organisation that they should be made easily accessible to the various scientific institutions and research workers throughout the world. This question was discussed informally in Paris by your Chairman and myself with the delegates, and it was generally agreed that the best method for obtaining the object in view would be to secure the publication of the reports in the standard technical periodicals published in English, French and German.

The editors of the *Annales de l'Institut Pasteur* expressed their willingness to circulate to their usual subscribers, free of charge, a special supplement in the form of a bulletin of the same size and in the same form as their periodical. The subscribing laboratories would thus be able to have the supplement bound up at the end of the year with the periodical.

The editors of the standard German monthly *Zeitschrift für Immunitätsforschung* have expressed their willingness to do the same with regard to their periodical.

The Medical Research Council of Great Britain has expressed its readiness to publish the reports in a special bulletin which might be made the first of a new series in anticipation of further research reports of the Health Organisation to be published through the same channel.

The editors of the two periodicals (French and German) would expect the Health Committee to provide them with the supplement itself, *i.e.*, to pay the cost of printing copies sufficient for their ordinary circulation. The estimated expenditure for the French edition would amount to between 3,600 and 4,500 Swiss francs. The volume would consist of 400 pages and would be printed in 2,500 copies. The cost of the German publication would amount to approximately 2,400 Swiss francs. The only charge to be met in respect of the English bulletin would be that of the copies which the Committee desire for free distribution and which the Secretariat would utilise for official purposes. The printing would be done by the Oxford University Press and it would be published by the Government Stationery Office. I have not as yet any estimate, but the cost of the English edition, if printed in France, would amount to roughly 4,800 Swiss francs. In other words, the total cost of the publication in three languages, in 2,500 copies, would amount to 11,400 Swiss francs. Of course the cost would be less if the distribution were reduced.

It is clear that the cost of the publication must be met by the Health Budget. The question of the method of publication being a very technical one, the Council will probably not desire to take a decision before hearing the opinion of the Committee on the matter.

There is a question of principle involved: namely, the free distribution of a League document paid for out of League funds as a supplement to a private periodical. Whatever the decision of the Committee, I am sure you will wish it to be made clear that the bulletins are League publications. This could be secured by having the documents published in regular League form but printed by the printers of the respective periodicals and distributed free of charge to their own subscribers. In any case each bulletin should contain some heading such as "Supplement on Scientific Research Work carried out for the League of Nations". The Committee may perhaps desire to call for further explanations from me when discussing the Chairman's report.

XI. EPIDEMIC COMMISSION.

(1) The members of the Committee are aware of the fact that no further contributions have been received from any of the Governments. The only contribution received for the Epidemic Commission is that of the Czechoslovakian Government amounting to 173,000 Swiss francs. The

British Government has promised to contribute half the amount contributed by the Czechoslovakian Government. This is a salient fact as regards the possibilities of the work of the Commission. The Health Committee has recommended that the Commission should continue its work, in agreement with the Governments of Latvia, Poland and Roumania on the one side and with the public health authorities of Soviet Russia and the Ukraine on the other, paying special attention to the needs of the border area between Russia and her western neighbours, and the problem of the sanitary control over repatriation should be considered with particular care.

The Commission was only able to carry out part of this work. The two Epidemic Commissioners in Moscow and Kharkow continued to supply very valuable information and to develop their co-operation with the public health authorities. The Commissioner resident in Warsaw continued his tours of inspection of sanitary institutions in the frontier zone of Poland for the establishment of which the Commission has co-operated.

The Epidemic Commission has further assisted in the organisation of the sanitary courses in Warsaw, Moscow and Kharkow.

As the Chief Epidemic Commissioner was leaving on a mission of enquiry in the Far East, a meeting of the Commission was convened in Warsaw on the 13th October at which arrangements were made for the continuation of the work. At that moment the funds at the disposal of the Epidemic Commission amounted to £30,864. The Commission will remember that this sum represented the remainder of the contribution of £50,000 given by the French Government and earmarked for Poland. The balance of the commitment of the Commission for Poland in connection with the expenditure of this French contribution amounted at that date to £16,479. It was considered that a sum of approximately £5,000 would be sufficient to cover all the administrative expenses for a period of 12 months. In expectation of the payment by the Czechoslovakian Government, which has since been realised, it was decided to offer immediate assistance to the Latvian Government to the extent of £10,000 and to purchase immediately material for Russian Ukraine to the value of £5,000. For this latter purchase it was necessary to draw temporarily upon the balance of the funds contributed for other purposes. This was facilitated by the fact that these credits were being paid in instalments during a period of six months.

(2) Latvia. The Committee, at its last session, approved the proposal that the assistance given to the Latvian Government should consist of the instalment of quarantine stations in Dvinsk (Daugavpils), and that it would supply the existing station at Rezekne. This scheme involved, however, an expenditure of £35,000, and further consideration of that scheme in the presence of two delegates of the Latvian Government indicated that a sum of at least £18,000 would be necessary to complete the part of the scheme essential for the working of the station at Dvinsk on a reduced though possibly adequate scale. The Commission has enquired of the Latvian Government whether it would be prepared to supplement the proposed contribution of £10,000, the sum required for the realisation of the Dvinsk scheme in a modified form.

The Latvian Government has stated that it cannot entertain this proposal and has suggested that the contribution of the Commission should be devoted to the establishment of a maritime quarantine station at Libau. The Commission has accepted this proposal and the Latvians have sent two experts to inspect the arrangements at Hamburg and Bremen as a preliminary step to working out the plans for Libau. Part of their expenses will be charged to the contribution of the Commission.

It is expected that detailed proposals for the Libau station will be submitted at an early date.

(3) Greece. On October 2nd we received a telegraphic request from Dr. Nansen, High Commissioner of the League of Nations for Refugees in Constantinople, for the services of one or two epidemic commissioners in connection with the sanitary control of the movement of refugees from Asia Minor to Constantinople. As hundreds of thousands of refugees were on the road, the High Commissioner feared that epidemics might spread. The Epidemic Commissioner resident in Warsaw was accordingly placed at the disposal of Dr. Nansen and arrived at Constantinople early in November.

When it was ascertained that the refugees were concentrating in Greece, and that the field of action of the High Commissariat did not extend as far as Asia Minor, the Epidemic Commissioner proceeded to inspect the various collections and encampments of the refugees both in Greece and Asia Minor. I had the honour to circulate to the members of the Committee one of the Epidemic Commissioner's earlier reports.

A few weeks later Dr. Nansen asked for the services of a second commissioner, and our representative in Moscow was requested to go at once to Greece.

The service of these two commissioners were lent to Dr. Nansen and they were not acting in Greek territory under the Epidemic commission at that time.

Since then, Dr. Nansen has communicated with the Secretary-General and offered to transfer to the Epidemic Commission the funds still at his disposal for the relief of Greek refugees in order that the Commission might continue to assist the Greek Government in the sanitary control of the refugees. The situation of the refugees has been summarised in *Epidemiological Report* No. 34 on the basis of the information received from our representatives and enquiries from American and other sources. The Committee will remember that at that time the epidemic situation in the refugee camps was fairly satisfactory. Although there was great danger of the outbreak of infectious diseases, no outbreak occurred in any of the camps. The High Commissariat offered a grant of £5,000 in addition to covering the administration expenses including the salaries of the Commissioners.

Negotiations were immediately begun both with the Greek authorities and with the American Red Cross acting in Greece. It is obvious that the Epidemic Commission could not start work

until requested to do so by the Greek Government, which has, in fact, asked for technical assistance. The only useful work which the Commission could do would be of a preventive nature. Having obtained the sanction of the Chairman of the Committee to the extension of the work of the Commission, I requested our two commissioners to come to Geneva for consultation, and after full consideration of the relevant facts and of the views of the Greek Government, we have come to the conclusion that the assistance might usefully be given in three directions:

(a) By the immediate supply of barracks, mobile baths and motor ambulances, the sum of £ 3,500 being utilised for this purpose.

(b) By the organisation of general vaccination of the refugees against smallpox, cholera, typhoid, paratyphoid, and, in places, against dysentery and plague. It has been estimated that a sum of £ 1,500 might be sufficient for the purpose;

(c) By acting in an advisory capacity to the Greek authorities as regards the sanitation of camps and the organisation of emergency anti-epidemic measures.

To make the vaccination effective involved the numerous units which will have to be appointed in order to vaccinate some 600,000 refugees throughout the whole territory of Greece and the main islands. Full details concerning the proposed operations are given in the annexed memorandum (Appendix 4). The annexed minutes (Appendix 5) summarise the general conclusions arrived at the Conference.

Since his return to Athens, one of the commissioners has reported the outbreak of smallpox on a large scale in several refugee camps and has requested an immediate despatch of lymph vaccine, while further telegraphic information has reached us of the outbreak of typhus in several camps, on the mainland and on the islands. The return of the second commissioner has been requested, as well as the earliest possible despatch of sanitary material.

XII. — EPIDEMIC SITUATION IN EASTERN EUROPE.

In the territories of Russia and the Ukraine, the epidemic outlook still continues to be very grave. The total figures for typhus since the beginning of the year 1922 amount to 1,334,869 while the figures for relapsing fever have totalled for the same period to 1,349,370. It will be noted, therefore, that the intensity of the incidence has in no way diminished as compared with the previous year (497,333 cases of typhus and 560,013 cases of relapsing fever were notified in the same period of 1921). During the period from August 1st to November 10th, 126,625 cases of relapsing fever were notified and 54,059 of typhus. The relapsing fever is specially prevalent in South-East Russia.

In addition, malaria has made its appearance this year in a tropical form and has spread in a very alarming manner. It appears to have originated in Turkestan and to have been spread over Russia by the peasants who fled from Turkestan during the famine of 1921 and who then returned to their homes during the early spring and summer of 1922.

It is not necessary to go into the details of the situation, as during the last four months no appreciable change has occurred.

It is becoming unfortunately clear that famine conditions will again prevail in a large territory situated more to the east than the famine zone of 1921, involving a population of about 8,000,000. The American Relief Organisations, who decided in the summer to concentrate their work on health work, have now decided to continue the famine relief as the most important factor in the whole situation. The medical branch of the American Relief Administration in Russia desires this year to concentrate on furnishing laboratory supplies, the maintenance of a large number of epidemic hospitals and the distribution of food supplies to the medical profession. This programme will involve the expenditure of several million dollars. It is not unlikely that the amount of assistance given by them will be considerably increased and that very large consignments of drugs will continue to be supplied, particularly in view of the danger of malaria.

It is obvious that the assistance offered by the Epidemic Commission in sanitary material to the Russian sanitary authorities has been very insignificant and it may not be possible to continue it even on this very modest scale. It should be realised that this part of the work of the Commission has practically come to an end, and that the Commission should concentrate its efforts on the epidemiological enquiries conducted by experts, public health statistics and further co-operation between public health services.

Steps have been taken in pursuance of the instructions of the Health Committee to assist the Russian health authorities in the proposed enquiries on the spread of typhus, and the Committee may perhaps desire me to give further details when discussing the question of the epidemiological services.

XIII. ACCOUNTS OF THE EPIDEMIC COMMISSION.

The Committee will remember that the accounts of the Commission were fully audited in July last and the auditors' statement was incorporated in the Second Annual Report of the Epidemic Commission. In view of the departure of the Chief Epidemic Commissioner for the Far East, the accounts have been re-audited and the statement of the auditors is annexed (Appendix 6).

The present financial situation of the Epidemic Commission may be summarised as follows;

(1) The balance of funds at the disposal of the Epidemic Commission is approximately	£ 17,600
Against this sum there are commitments to the Polish Government, namely . . .	10,500
Leaving a net balance of	£ 7,100
or Swiss francs	173,950
To this must be added the Czechoslovak contribution of	173,535
Making a total available of	347,485
In view of the payment of this contribution the British Government is prepared to make a grant representing one-half of this amount, namely	86,767
Making a total of	434,252
(2) The Epidemic Commission is pledged to the Latvian Government to make a contribution for the establishment of a maritime quarantine station of £10,000, or	245,000
Leaving a balance available of	189,252
(3) The Budget of the Health Organisation allows a contribution to the Epidemic Commission of	50,000
Making the total sums likely to be available	239,252
(4) Purchases for Russia made on account of the Czechoslovak contribution amounted to	98,000
Leaving a balance of	141,252
(5) The salaries of the three commissioners represent, for six months, Sw.Fr. 36,750	
The Chief Epidemic Commissioner	18,375
Secretariat staff and Secretary	32,000
Making a total of	87,125
Leaving a balance of Swiss Francs	54,127

Appendices to the Report of the Medical Director.

APPENDIX I TO ANNEX 3.

LETTER FROM THE PRESIDENT OF THE COUNCIL TO STATES MEMBERS REPRESENTED
AT THIRD ASSEMBLY CONCERNING THE WORK OF THE EPIDEMIC COMMISSION.

GENEVA, September 15th, 1922.

Your Lordship,

Your Lordship is aware of the circumstances that led to the convocation of a European International Health Conference in Warsaw in March of the present year and of the recommendations and resolutions adopted by that Conference. These recommendations were taken into consideration by the Economic Conference at Genoa, which approved both the principles of anti-epidemic action enunciated by the Warsaw Conference and the recommendation that the Epidemic Commission of the League of Nations be entrusted with the duty of controlling and supervising the expenditure of such national subscriptions as might be contributed for the prosecution of the anti-epidemic campaign. The Governments represented at Genoa further undertook to approach their respective parliaments for the financial assistance necessary to give practical effect to the programme laid down by the expert Conference at Warsaw.

Up to the present no further subscriptions to the funds of the Epidemic Commission have been received as the result of this recommendation made by the Genoa Conference. The British Government, however, has obtained parliamentary sanction to a further contribution to the Epidemic Commission of £100,000 provided that other Governments interested together contribute sums totalling £200,000. The Czechoslovak Government has promised a contribution of one million crowns.

The Council of the League of Nations, at a recent session, considered that no useful purpose would be served by the issue of another general appeal to Members of the League, as the facts regarding the serious epidemic situation in Eastern Europe were known to all. The Council therefore considered that the responsibility for the carrying out or otherwise of the programme laid down by the International Health Conference at Warsaw must rest with the individual Governments. At the same time it was thought well that all delegations present at the Assembly should be acquainted with the conditions governing the British offer of assistance referred to above, so that endeavours might be made before the close of the Assembly to obtain promises of contributions sufficient to enable immediate advantage to be taken of the British offer.

It is in compliance with this decision of the Council that I now address your Lordship with the request that, if there be no objection, you will kindly ascertain the extent of assistance that your Government is disposed to give. I need not here refer in detail to the continued gravity of the epidemic situation in the countries of Eastern Europe or to the urgency and magnitude of the task that waits to be accomplished. These matters have been dealt with fully in the reports of the Warsaw Conference and of the Epidemic Commission and in the various publications recently issued by the Health Section of the League of Nations. It will suffice if I point out that an indefinite continuance of the existing state of affairs will not only add enormously to the sum total of human misery and suffering but will continue to be, as it is at present, one of the most formidable obstacles to economic recuperation and stability in the countries concerned. I would also lay stress on the considerable effort made by the countries bordering on Russia to carry out, with relatively little outside assistance, an effective anti-epidemic campaign. When compared with the resources of these countries, this effort has been indeed remarkable.

Trusting that your Lordship's Government will be in a position to respond generously to this appeal,

I have the honour, etc.

D. DA GAMA,
President of the Council.

APPENDIX II TO ANNEX 3.

INTERCHANGE OF PUBLIC HEALTH PERSONNEL.

Letter from the Secretary-General to the South American States.

GENEVA, November 7th, 1922.

Sir,

Further to the conversations which I had with the delegates of several Latin American States towards the end of the Assembly, I think it would be well to draw your attention to a passage in the Resolution adopted by the Third Assembly at its plenary meeting held on September 15th referring to the interchange of public health personnel of various countries which was undertaken under the auspices of the Health Organisation.

A first experimental interchange is being carried out in Europe. Some thirty officials belonging to the health services of various European countries met at Brussels, where they attended lectures on Belgian legislation relative to health problems and on the details of the administration of the Belgian public health services. The officials taking part in this interchange will finally be attached for a term of practical service to various health services, particularly to that of Italy. A second and a third interchange will be organised early next year, and the experience gained in Belgium and Italy will be taken into account. These interchanges, approved in principle by the Assembly, are intended to establish contact between the health services of the various countries, to spread the knowledge of their health legislation and to permit of the creation of closer relations and a certain unity of method among the various health services. The officials of the health services appointed by their Governments will be able to take advantage of the interchanges to gain a knowledge of the methods applied in the countries they visit, and they will be able to exchange their views on health problems with their colleagues of other nationalities. In organising these interchanges, the Health Organisation has been generously helped by the Rockefeller Foundation, which has granted a substantial contribution to the budget of the League of Nations for this purpose.

It is extremely desirable that the carrying-out of the programme should not be limited to European countries solely. The Assembly clearly pointed out that this was its desire. The delegates of several non-European countries stated how interested they would be to see some of their own health services take part in the programme of interchange of public health personnel.

May I therefore enquire whether it would be possible for your Government to consider to what extent the officials of its health service could take part in the forthcoming meetings?

I shall not fail to send you as soon as possible all available information concerning the programme drawn up by the Health Section. Moreover, the decision of the Assembly leaves scope for the modification of details of the original programme. Should it seem desirable to do so, it would no doubt be possible to organise, apart from the lectures and terms of practical service held in Europe, lectures followed by terms of service in countries outside Europe. It would be of the greatest value to us if we could have your Government's views on this subject to serve as a guide in the realisation of further experiments to be carried out next year.

Unfortunately the credits at the disposal of the Health Organisation of the League of Nations render it difficult to charge to the budget of the Organisation the expenses of the sea voyages of the various medical officers of health. According to the present arrangements, the Health Organisation is prepared to refund the medical officers' second-class fares on railways for Continental travelling and to pay them a daily subsistence allowance of £1 for the duration of the lectures and term of practical service.

I have the honour to be, etc.

SECRETARY-GENERAL.

APPENDIX 3 TO ANNEX 3.

INTERCHANGE OF PUBLIC HEALTH PERSONNEL

(Letter from the Medical Director to the Health Administrations)

Geneva, December 16th, 1922.

Sir,

I have the honour to inform you that the Health Section of the League of Nations, with the support of the Rockefeller Foundation, organised, during the months of October, November and December 1922, a first experimental interchange of public health personnel from several European countries. This interchange took place in Belgium and Italy.

In each of these countries the medical officers attended lectures and conferences on the system of general and health legislation, on the characteristics of their health, social and political organisations, on the attitude of public opinion with regard to various health problems which are being worked out or are under discussion in these countries, and on the details of administrations of the various public health services.

The medical officers further visited public health and social welfare institutions, both State, provincial, communal and private, after addresses on the subject by leading health experts.

The medical officers were finally attached for a term of practical service to the various health services in order to gain intimate knowledge of the working of the health organisation, the method of applying the legal measures and regulations, and the daily work of the medical health officers under whose guidance they had been placed.

In conformity with the decision of the Third Assembly of the League of Nations, and under the direction of the Health Committee, preparations are in progress for a second experimental interchange, which will probably begin during the month of February 1923. This experiment will also last about three months — six to seven weeks will be spent in England and six to seven weeks in a Central European country. The Central European country has not yet been definitely selected, but the Health Committee will arrive at a final decision on the subject at its next meeting in January 1923.

This second interchange of personnel will comprise:

(1) A preliminary period of ten to fifteen days during which a series of conferences and lectures will be given in order that the foreign medical officers may have the opportunity of learning the principles of the working of the various health services and their relations with the central and local authorities and public institutions;

(2) A period of four to five weeks devoted to practical service which the medical officers, in groups of five to eight, will attend. They will stay successively in urban, rural and industrial areas, taking part in the daily work of the medical officers of health.

The number of foreign medical officers of health invited to take part in this second experimental interchange has necessarily been limited to twenty-five, as the funds at the disposal of the Health Organisation of the League of Nations do not allow this figure to be exceeded. In view of the experience gained during the first interchange and in view of the economic situation, the Health Committee and those sanitary administrations concerned in the experiment have decided that the medical officers taking part in this interchange shall be entitled to a daily allowance of 20—for England and 30—for Central Europe. The travelling expenses (second-class railway fare, with supplement for sleeping-car accommodation for the night, etc.) of the officers concerned will be refunded.

In order to derive real benefit from their course of study, the medical officers of health should have had several years' technical experience of service with a public health administration either communal, provincial or State.

May I draw your attention to the fact that the forthcoming interchange is a further experiment designed to supplement the first, which was recently carried out in Belgium and Italy? The results of these experiments will enable the Health Committee to arrange a series of interchanges between the members of the public health services; these systematic interchanges will be spread over a period of two and a-half years, beginning in June 1923.

I should be grateful if you would kindly inform me whether you wish to select three medical officers from your country to take part in the forthcoming interchanges. In any case, I should

be glad if you could communicate your decision to me before the meeting of the Health Committee on January 8th, 1923, and could let me have particulars of the candidates (according to the enclosed form).

I have the honour, etc.

MEDICAL DIRECTOR.

APPENDIX IV TO ANNEX 3.

PROVISIONAL EPIDEMIC COMMISSION

Record of the Meetings held on December 16th, 18th and 19th, 1922.

The actual organisation of vaccination was the subject of a searching discussion which threw light on the various aspects of the matter and on the obstacles to its fulfilment.

One important point was to determine which class of refugees should be dealt with first. It was decided to begin with:

(1) The more thickly crowded groups of refugees, both for prophylactic reasons and because they offered opportunity for rapid action and effective control;

(2) The island refugees, whom it would be easy to superintend, as forming stationary groups.

A second and a most important point was to determine what kinds of vaccination to employ; it was decided that the Commissioner of the Epidemic Commission should endeavour to induce the Health Section appointed by the Greek Government to organise this work to agree to the following vaccinations: Smallpox, Typhoid and Paratyphoid, Cholera, which should be universal, and dysentery and plague vaccinations, which were to be employed to a more limited extent.

I.

Smallpox Vaccinations.

All refugees should be vaccinated against smallpox. It is extremely unlikely that the quantities of Jenner's vaccine prepared at Athens will be adequate in view of the immense number of refugees to be vaccinated within such a short period. Levaditi's and Nicolao's smallpox vaccine may therefore have to be used. In this case, only very small bodies of refugees should be selected in order to enable a careful and conscientious observation to be taken of the results obtained.

II.

Typhoid, Paratyphoid and Cholera Vaccination.

As these three vaccinations can be given by employing polyvalent vaccines, they may, instead of being dealt with separately, be considered together.

In any case, it was acknowledged that a biological test was necessary with each vaccine, in order to ascertain its innocuousness before use. The methods of absorption through the mouth or of hypodermic injection would be employed according to circumstances.

It was agreed that refugees between the ages of 6 and 60 should be given these vaccinations.

III.

Dysentery Vaccinations.

It must be clearly understood that dysentery vaccination should not be carried out universally; it should be restricted chiefly to refugees living in districts in which dysentery is endemic.

in Salonika for instance. In these cases it is absolutely necessary, first, to make tests for the purpose of ascertaining the agent which caused the infection and then to employ the proper vaccine.

Here again the methods of absorption by the mouth or by hypodermic injection may be employed. In cases in which it is decided to use hypodermic injection for dysentery vaccination, it has been found that a sexta vaccine would be preferable to a purely bivalent dysentery vaccine, as the former produce less-violent reactions than vaccines of a smaller polyvalence.

IV.

Plague Vaccination.

It was agreed that the plague vaccine should only be used in special circumstances as determined by events.

V.

Typhus Vaccination.

As this vaccine has not yet given sufficient proofs of efficacy, it appeared preferable not to use it but to ensure that refugees on moving are deloused.

VI.

Vaccination Procedure.

The relations between the Commissioner of the Epidemic Commission and the Greek health staff in charge of vaccination were defined in the Protocol of December 18th, 1922, and it is not necessary here to refer to this question.

The number of Greek health officials was fixed in accordance with the sub-division of Greek territory into eleven territorial provinces, and provision was made for the appointment of ten vaccination staffs, each staff comprising a doctor and six male or female assistants.

It was agreed that the choice of this staff would often depend upon local conditions, and although it was impossible to draw up *a priori* conditions for such selection, it was thought that the principle of selection should be that each assistant should be able in case of need to become head of a new staff formed with locally recruited personnel.

The principle for fixing the rate of remuneration for such staff was laid down in the Protocol of December 18th, 1922, but as it was agreed that they should form part of the Greek health services, it appeared only reasonable that they should receive their pay from the Greek Government, to which the Commissioner of the Epidemic Commission should, from time to time, forward the contribution granted for this purpose by the Commission.

It is of the utmost importance that vaccination should be organised in such a manner that a really scientific experiment can be made for the purpose of determining the preventive value of the vaccine employed and of the value of the method of absorption under clearly defined conditions; and, further, that a strict but simple control should exist. The services of Greek and foreign specialists might, if thought necessary, be called upon to fix the conditions for experiments.

VII.

Budget.

The estimate for a budget of this kind can only be quite approximate. It must be remembered, before all, that the Epidemic Commission can only devote to this portion of its relief work the sum of £1,500; accordingly, should this sum prove inadequate, it would be necessary to ask for financial help from the Greek Government.

It must be remembered that the rate of payment for Greek officials employed in vaccinating was to be fixed in agreement with the Greek Government after arrangement with the representatives of the American Red Cross.

If we estimate the contribution made by the Epidemic Commission at:

- 1,500 drachmas a month for doctors,
- 600 drachmas a month for assistants,
- 50 drachmas as a daily travelling allowance for doctors for 20 journeys a month,
- 30 drachmas as a daily travelling allowance for assistants for 20 journeys a month,
- £450 for purchase of material.

We obtain the following rough estimate :

	Drachmas
10 doctors for three months at 1,500 drachmas a month.	45,000
600 days' travelling allowance at 50 drachmas a day.	30,000
60 assistants for three months at 600 drachmas a month.	108,000
3,600 days' travelling allowance at 30 drachmas a day.	108,000
Total	291,000

On December 20th, 1922, the £ sterling = 349 drachmas

Therefore 291,000 drachmas =	£ 834
Purchase of material	450
In hand	216
Total	£1,500

GENEVA, December 21st, 1922.

APPENDIX V TO ANNEX 3.

PROVISIONAL EPIDEMIC COMMISSION.

Record of Meetings held on December 14th and 15th, 1922.

The question on the agenda dealt with the action taken in Greece by the Epidemic Commission of the League of Nations as an autonomous unit, independent of the action taken by Dr. Nansen's High Commissariat.

The sum of £5,000 sterling was placed at the disposal of the Commission for this purpose by Dr. Nansen.

(1) The information supplied by the Commissioners, Dr. Gauthier and Dr. Haigh, was to the effect that the health situation is liable to become, at any moment, worse, as a result of the unsatisfactory sanitary conditions.

(2) The refugees are distributed over the whole territory of Continental Greece and the Greek islands, either in concentration camps or in public buildings in the towns, or else placed among the inhabitants of the villages. These different circumstances increase the difficulties of the problem.

(3) The medical resources of the country itself are clearly inadequate to cope with so sudden an increase in the number of inhabitants and in the causes of insanitary conditions. Faced with such a situation, the American Red Cross is installing 5,000 beds and sending staff whose duties will include the inspection of its material and the introduction of sanitary methods into camps. It will also bear a share of the payment of the 167 Greek doctors already in charge of the medical service of the refugees.

According to the Greek authorities, smallpox vaccination is already being carried out by means of vaccine prepared in the country itself.

The action to be taken by the Epidemic Commission should therefore be the following:

- (1) The purchase of baraqucs, motor ambulances and portable baths.
- (2) The organisation and carrying out of vaccination.
- (3) Technical advice, when requested by the Greek Government.

(1) *The Purchase of Camps, Huts, Motor Ambulances and Mobile Baths.*

M. Doxiades, Minister of Public Relief, expressed to Dr. Haigh, when the latter was passing through Athens, his earnest desire that the Epidemic Commission should purchase its store because he considered that hospital accommodation, removal of contagious cases to hospital and delousing were the most urgent questions to be solved. The Commissioners, therefore, decide that they would be well-advised to effect these purchases immediately up to a sum of £3,500 provided that the Greek Government gave a written agreement thereto. A telegram to this effect was sent to M. Doxiades. The purchase of these stores would result in the speedy materialisation of the Epidemic Commission's endeavours, and would demonstrate the practical nature of its work.

(2) *Organisation and Method of Vaccination.*

After a close study of the health situation, taking into account the importance of prophylaxis from an international point of view—particularly because the epidemic danger is a permanent

one—it was considered essential to organise the vaccination of the refugees with the least possible delay.

The Epidemic Commission having thus assumed responsibility, the Commissioners considered it their duty to point out to the Greek Government that vaccination was essential in order to prevent the possibility of the outbreak of epidemics which could not but be disastrous among these dense masses of refugees; and, further, that it would be desirable to afford the refugees the benefit of the most modern methods of vaccination and to institute comparison between the respective values of the various toxins and the methods of administering them.

In the course of conversations which M. Doxiades had with Dr. Gauthier and Dr. Haigh, the former agreed as to the necessity of vaccinating the refugees; the principle having thus been accepted, the Commissioners considered that they should propose to the Greek Government that the vaccination scheme should be organised on the following lines:

(a) The Greek Government would place one of its health services in charge of the organisation for vaccinating refugees. In accordance with a desire expressed by M. Doxiades, the Epidemic Commission would assist by appointing one of its Commissioners as an active member of this service, to be in charge of the execution of the general order given by the service; the methods of putting the scheme into practice would be adopted by mutual agreement.

(b) The Epidemic Commission was prepared to devote £1,500 sterling to the purchase of the necessary stores in Greece and abroad and also to contribute to a certain extent to the salaries and allowances to Greek officials employed in carrying out the vaccination.

The staff might include ten doctors and sixty assistants. Their salaries would be fixed by previous agreement with the Greek Government and the American Red Cross, and, if necessary, with the Greek relief societies.

(c) The various practical details would be clearly and precisely determined by official correspondence between the Greek Government and the Epidemic Commissioners.

It was understood that the vaccination scheme would be carried out within three months.

(3) *Technical Consultations.*

After an exchange of views between M. Doxiades and the Commissioners on the subject of the very great importance of the health problem as affecting the refugees, the minister expressed a desire that the Commissioners of the Epidemic Commission should assist him with technical advice in the accomplishment of his task.

The action to be taken by the Commissioners under this heading was considered with all requisite care, and it was decided that one of the Commissioners should be placed at the disposal of the Greek health services as a technical adviser for all matters connected with health questions affecting the refugees.

It was realised that this duty necessarily implied the holding of local enquiries into matters of health, but in this question, as in that of vaccination, practical details would be settled by means of official correspondence between the Governments and the Commissioners.

(4) *Allocation of Duties.*

In view of the temporary character of the Epidemic Commission's work and the urgent necessity of taking stronger measures, it was realised that it would be better to divide the work, not by territorial districts but by separate departments, in order to obtain unity of control in each of these fields.

Dr. Gauthier was entrusted with the work of vaccination, his headquarters being fixed at Athens, so that he might keep in touch with the central Greek health authorities.

In view of the difficulties and slowness of communication between Athens and Salonika—the two chief centres near which the majority of the refugees were distributed—it was decided to apply for the consent of the Greek Government to the appointment of an assistant doctor to Dr. Gauthier, with headquarters at Salonika.

The post of technical adviser to the Government health services was allocated to Dr. Haigh.

As regards the internal organisation of his services, Dr. Haigh expressed the view that there was no need at the moment to appoint an assistant doctor, but he considered that it would, perhaps, be desirable, in view of the insanitary condition of the camps, to suggest that the Greek Government should enlist temporarily the services of a sanitary engineer.

(Signed) A. GAUTHIER.
W. E. HAIGH,
Ludwik RAJCHMAN,
H. RULOT.

Geneva, December 18th, 1922.

APPENDIX VI TO ANNEX 3.

ACCOUNTS OF THE EPIDEMIC COMMISSION.

Chief Commissioner,
Epidemic Commission,
League of Nations,
Geneva.

LONDON, December 7th, 1922.

Dear Sir,

In pursuance of instructions, we have examined the accounts of the Head Office of the Commission for the eleven months ended October 31st, 1922, and the accounts of the Warsaw Office and Moscow Office for the five months and ten months ended that date respectively.

We now present our report thereon, together with exhibits as per prefixed index.

Income and Expenditure Account.

Exhibit "A" sets out the operations of Head Office for the eleven months ended October 31st, 1922, incorporating the expenditure per Warsaw Office. As no balance of the accounts of the latter Office was made at the time of the last annual accounts of Head Office, the expenditure through that source has been included at the total figure to that date, less the amount charged in Head Office accounts to November 30th, 1921, and which represented the remittance made less balance remaining in hand at that date.

The contributions received during the period have amounted to £59,718. 7. 11, consisting of the following:

	£	s.	d.
Belgium (2nd contribution).	1,000.	0.	0
France	50,000.	0.	0
Holland (fl. 10,000)	8,718.	7.	11
	<hr/>		
	£ 59,718.	7.	11

In addition to the foregoing income, there has been credited a sum of £932.14. 5 interest on bank deposits, making a total income for the period of £60,651. 2. 4.

The expenditure may be summarised as follows:

Per Head Office:

	£	s.	d.
Supplies to Poland	3,057.	10.	0
Supplies to Russia	304.	15.	6
Administration Expenses.	5,394.	1.	2
Per Warsaw Office	50,465.	19.	6
	<hr/>		
	£59,222.	6.	2

The total income for the period has exceeded the expenditure by £1,428.16. 2, making, with the balance of £28,928.19. 8 brought forward as at November 30th, a total of £30,357.15.10 unexpended. As against this balance certain commitments have been made as hereinafter referred to.

The following is a summary of the income and expenditure of the Commission from the date of its inception to October 31st, 1922.

INCOME:	Per Warsaw Office			Per Head Office			Total		
Contributions and Donations:	£	s.	d.	£	s.	d.	£	s.	d.
National Contributions.	—			186,055.	12.	3	186,055.	12.	3
League of Red Cross Societies.	—			10,000.	0.	0	10,000.	0.	0
Private Donations.	—			26.	16.	0	26.	16.	0
Interest on Bank Deposits	5.	13.	6	1,344.	6.	4	1,349.	19.	10
	<hr/>			<hr/>			<hr/>		
	£ 5.	13.	6	£ 197,426.	14.	7	£ 197,432.	8.	1

EXPENDITURE:	Per Warsaw Office			Per Head Office			Total		
	£	s.	d.	£	s.	d.	£	s.	d.
Supplies and Grants to Poland . . .	56,488.	18.	7	86,308.	3.	4	142,797.	1.	11
Supplies to Russia	8,224.	2.	0	304.	15.	6	8,528.	17.	6
Administration Expenses.	3,421.	14.	10	11,245.	19.	10	14,667.	14.	8
Exchange	805.	7.	10	—	—	—	805.	7.	10
Research Work	275.	10.	4	—	—	—	275.	10.	4
	<hr/>			<hr/>			<hr/>		
	£69,215.	13.	7	£97,858.	18.	8	£167,074.	12.	3
Excess of Income over Expenditure							£30,357.	15.	10

The administration expenses are sub-divided as follows:

	£	s.	d.
Salaries	8,833.	6.	11
Travelling	4,452.	10.	2
Miscellaneous	1,381.	17.	7
	<hr/>		
	£14,667.	14.	8

The percentage of total administration expenses to total income is 7.43 %, whilst of this percentage 2.26 % represents travelling expenses due to the large area covered.

It will be seen that £ 805.7.10 is included with expenditure in respect of exchange. Income and Expenditure Accounts of Warsaw and Moscow Offices have been converted at the average rates at which sterling has been exchanged, and balance-sheet items as at October 31st, 1922, have been converted at the rates quoted at that date.

During the period under review, settlement of insurance claims were made amounting to £507.8.0 in respect of losses during the prior period, and this sum has been deducted from expenditure in the annexed accounts. A rebate obtained in respect of motor spares has been similarly treated.

Balance Sheet.

Exhibit "B" sets out the financial position as at October 31st, 1922.

Cash at banks has been verified by bank certificates. The letter of credit for £6,000 in transit to Warsaw has been produced to us, and is accounted for in the Warsaw accounts subsequently to date of balance sheet. The balance of £775.12.3 on letters of credit held at Warsaw have been verified by inspectors.

Commitments. We understand that the French Government contribution of £50,000 was allocated as follows:

	£
Barracks	2,500
Mobile Laboratory	1,000
Cyanide	1,000
"Reserve"	2,500
	<hr/>
	7,000
Polish Ministry Grants	43,000
	<hr/>
	£50,000

The scheme arranged for the latter grants was calculated at the rate of 18,000 Polish marks to the £ and amounted to P.M. 774,000,000 or £43,002. We understand that an arrangement was made in October whereby grants would in future be made in sterling and that payment to that date should be credited at an average rate of P.M. 23,583 to £. At that time the payments had totalled P.M. 644,404,664, equivalent to £27,323, leaving a balance of £15,679 outstanding. Since that date a sum of £719.3.0 (P.M. 42,000,000) was paid, making the balance outstanding £14,959.17.0.

The outstanding commitments as at October 31st, 1922, amounting to £16,831.15.7, comprise the following:

	£	s.	d.	£	s.	d.
Balance of allocation of £43,002 to Polish Ministry, as above				14,959.	17.	0
Mobile Laboratory Allocation	1,000.	0.	0			
Less: Amount expended per Head Office . . .	750.	0.	0			
	<hr/>				250.	0.0
Cyanide Allocation	1,000.	0.	0			
Less: Amount expended per Warsaw Office (G. M. 293,809) considered equivalent to .	200.	0.	0			
	<hr/>				800.	0.0
Barracks Allocation	2,500.	0.	0			
Less: Amount expended per Head Office . .	1,721.	8.	0			
	<hr/>				778.	12.0
Carried forward				£16,788.	9.	0

Brought forward.

£ s. d.
£16,788.9.0

Ministry of Approvisation, Poland, hospital screens P. M. 1,772,978
Hospital Units for Russia, estimated balance . . . 1,000,000

P. M. 2,772,978

43. 6.7

£16,831.15.7

P. M.: 64,000 to £.

With regard to the mobile laboratory, we understand that further sums will require to be expended for alterations and also transport, and the balance of £250 from the allocation is therefore included as a commitment.

The actual cost in sterling of cyanide already purchased was only £69.4.9, owing to difference in rate of exchange, but we understand that at the rate at which the allocation was calculated this expenditure is to be considered the equivalent of £200, leaving a balance of £800 unexpended.

We understand that, in addition to the foregoing commitments, a conditional offer of a grant to the Latvian Ministry has been put forward, but no definite conclusion had been arrived at the date of audit.

Warsaw Office.

In Exhibit "C" we have combined the Epidemic Account and Sanitation Account, Warsaw, and Moscow Office Accounts. The accounts of each branch are detailed in Exhibit "D" to "I" inclusive. In combining these accounts we have converted the items at the rates of exchange existing as at October 31st, 1922, resulting in a loss of exchange of £658.15.6.

Epidemic Account. The expenditure on this account has been met by advances from Sanitation Account, with the exception of £1,000 remitted from Head Office to National Bank für Deutschland, Berlin.

The purchase of cyanide included in expenditure, namely G.M. 293,809 — £69.4.9 forms part of the allocation of the French Government contribution of £50,000.

Advances on account of salaries and travelling expenses comprise:

M. Birencwajg — Salary	£40
Col. Gauthier — Travelling, Constantinople	£50
Chauffeur	P. M. 156,000

Sanitation Account. We have not had produced to us the audit report of the Polish Government Control Department in respect of grants to, and expenditure by, Naczelný Nadzwyczajny Komisarjat, and we understand that no such report has been received since that to March 31st, 1922, previously inspected by us. We have, however, inspected statements from the Komisarjat dated November 16th, 1922, showing the expenditure to have been as follows:

Old Scheme	Grants	Expenditure
Piotrkow	P. M. 2,500,000	P. M. 1,425,000
Zakopane	12,000,000	8,246,025
Wlodawa	1,500,000	1,450,000
Sandomierz	2,000,000	1,500,000
Okreg Lwow	16,295,320	16,295,320
Sanok	3,500,000	—
Kalisz	2,500,000	2,500,000
	P. M. 40,295,320	P. M. 31,416,345
 New Scheme		
New Hospitals	P. M. 313,604,664	P. M. 412,370,340
Points étape d'hiver	117,000,000	117,000,000
Points étape d'été	10,000,000	17,000,000
Internment Camps	14,800,000	14,800,000
Bathing Establishments	40,500,000	27,200,000
Repatriation	190,500,000	179,300,000
	P. M. 686,404,664 (£28,042.3.0)	P. M. 760,670,340

It will be observed that in the case of grants under the new scheme, such grants had been anticipated by expenditure to the extent of P. M. 74,265,676 as at October 31st, 1922.

Moscow Office.

The accounts of the Moscow Office for the ten months ended October 31st, 1922, have been incorporated with those of Warsaw Office.

A sum of £7 cash paid in and converted into Russian roubles in October has been carried in suspense, as we have no present information regarding the source of this amount pending the absence of the Medical Director.

Generally.

Vouchers have been produced for all expenditure charged, and all income reported as received has been duly accounted for.

We report that we have obtained all the information and explanations we have required, and in our opinion the attached balance sheet and Income and Expenditure Account exhibit a true and correct view of the state of the affairs of the Commission, and the operations for the period, respectively, according to the best of our information and the explanations given us, and as shown by the books of the Commission. We shall be glad to afford you any further information regarding the accounts should you so desire.

Yours faithfully,

(Signed) RALPH SUTTON & Co.,
Chartered Accountants,
Auditors.

Annex 4.

REPORT ON THE FAR EASTERN COMMISSION OF ENQUIRY.

(Report by Professor Calmette.)

GENEVA, January 8th, 1923.

As you are aware, Dr. Miyajima, at the Third Session of the Health Committee, held in Paris, in May 1922, presented a report on cholera and plague in the Far East. He recommended that a Commission of Enquiry should be sent out to the East to investigate conditions in the ports, and sanitary regulations generally, with a view to controlling the spread of epidemics.

The Health Committee, after discussion, asked the Medical Director to study the question and the matter was again taken up at the Fourth Session, held in August. The following resolution was then adopted :

"The Health Committee, having considered the proposals put forward by Dr. Miyajima for the despatch of a small commission to the Far East, to collect information regarding the incidence of epidemic diseases, especially those of international importance, in important ports, and the measures taken to prevent the transmission of these diseases to other ports, recommends in principle the despatch of a Commission.

"The Health Committee appoints a Sub-Committee of three members in order to define :

- "(a) The details of the enquiry, the objects of which are defined above; and
- "(b) The preliminary negotiations to be undertaken, as well as to make recommendations to the Chairman of the Committee as regards the appointment of the Commissioners."

A Sub-Committee was accordingly appointed, consisting of :

Sir George BUCHANAN,
Professor CALMETTE, and
Dr. MIYAJIMA.

The first meeting, attended by Sir George Buchanan and Dr. Miyajima, with Dr. Norman White, was held on August 23rd, at Geneva. The Sub-Committee considered that, in consideration of climatic conditions, the mission should start not later than December. The subjects of enquiry, the route and the countries to be visited were discussed, as also the steps to be taken to obtain the concurrence of the Governments of the countries in question. Sir George Buchanan undertook, in consultation with Dr. Calmette and Dr. Miyajima, to arrange for preliminary information concerning the objects of the mission to be furnished in certain instances in advance of the formal request from the Secretariat. It was also arranged that preliminary unofficial enquiries should be made by members of the Sub-Committee, in order to ascertain what experts might be available for nomination to the Chairman as members of the Commission.

The main objects which the Sub-Committee decided to recommend for special study by the Commission were as follow :

1. Enquiries on the transmission of infectious diseases from port to port; the measures adopted and the co-ordination already obtained or which is considered desirable in international interests; the relation also of any such co-ordination with the proposed revision of the International Sanitary Convention of 1912.

2. Study of the material available from the different countries which shows the progress of epidemics, so as to facilitate the use of such material by the central health office; the desirability of establishing a local epidemic intelligence centre for Far Eastern countries.

The Sub-Committee adopted the view that, although the report of the Commission might have very valuable results in relation to the application of the International Sanitary Convention in the Far East, and might lead to useful supplementary agreements under that Convention, the fact of the Commission's enquiries did not, and should not, constitute an argument for postponing the proposed International Sanitary Conference to revise that Convention.

The Council of the League of Nation, at a meeting held on September 2nd, approved the proposal of the despatch of a Commission of Enquiry to the Far East, with the suggestion that two

or three experts, with special experience of international public health agreements and tropical diseases, should be appointed.

The Sub-Committee held its second meeting in Paris on September 27th, 1922. It was attended by all three members and also by Dr. Rajchman, Dr. Norman White and Dr. Jitta. The composition of the Commission formed the chief subject of the discussion. Representations were made to the Sub-Committee by the Medical Director and in a letter from the Secretary, General to Sir George Buchanan that, from the point of view of the League, two conditions were almost indispensable: first, that one of the commissioners should be an expert connected with the Health Section, and second, that the other commissioner should be a national of one of the smaller European States. Stress was also laid on the necessity of limiting the Commission as much as possible in consideration of the funds available.

The Sub-Committee considered that these representations necessarily imposed a regrettable limitation on the choice of the experts whom they could suggest for nomination. In the circumstances, they decided to recommend that Dr. Jitta and Dr. Norman White, two very experienced and distinguished hygienists, should be appointed.

Dr. Jitta promised to give his definite answer as soon as he should have had time to consult his Ministry.

A letter from the Prince of Siam was also read. In this letter he urged that, as a preliminary, the Commission should attend the Bangkok Conference, which was to be held, under the auspices of the League of Red Cross Societies, at the end of November, and which would be discussing questions of interest to the League. It was accordingly decided that at least one of the members of the Commission should take part in the Conference, and Dr. Norman White was asked to make the necessary arrangements in order to be able to sail in time to be present at it.

It was further decided that the Commission should, subject to the assent of the Governments concerned, visit the following places :

Bombay,
Calcutta,
Singapore,
Batavia,
Bangkok,
Saigon, Hanoi and Haiphong,
Hong-Kong,
Formosa,
Shanghai,
Kobe, Yokohama,
and perhaps the Philippines.

After the meeting of the Committee, Dr. Jitta informed the members that he was unfortunately not able to join the Commission as his Ministry could not grant him sufficiently long leave.

Accordingly, a third meeting of the Sub-Committee was held in Paris on October 26th. It was considered impossible to obtain at short notice the assistance of other hygienists who would comply with the conditions which had been accepted at the last meeting, having regard to the very limited time available. The Sub-Committee, therefore, did not suggest the nomination of another member in substitution for Dr. Jitta. It was ascertained that Dr. Norman White's services could be made available at once and that he had provisionally made arrangements to proceed to the Far East in time for the Conference at Bangkok to which reference has been made above.

In the circumstances, the Sub-Committee recommended that, without prejudice to proposals in a future year for a more extended mission, Dr. Norman White should be entrusted, after completing his visit to Bangkok, with the duty of visiting the different countries which had been decided on in the Far East, and that, so far as practicable in the circumstances, he should himself obtain the information and make the necessary visits on the lines of the memorandum which had been prepared to indicate the objects of the mission.

The Committee learned that it was the intention of the Surgeon-General of the United States Public Health Service to take advantage of the Far Eastern Commission and to commission one of its experts to accompany Dr. Norman White on the tour of inspection, or at least for some part of it. It was considered that this arrangement should be mutually helpful.

Dr. Norman White left for the Far East on November 3rd, and interim communications have since been forwarded by him from Bangkok and from Singapore.

Annex 5.

*Letter from the Director of the North Manchuria Plague Prevention Service to the
Chairman of the Health Committee.*

HARBIN, CHINE, September 27th, 1922.

Sir,

Our Government has forwarded me a copy of the Report of the Health Committee of the League of Nations, dated January 6th, 1922, which contains, among other things, the following:

Para. 6.—The Japanese member of the Committee drew attention to the very serious problem of the incessant prevalence of pneumonic plague in Manchuria and Siberia. The Health Committee declared itself generally in favour of sending a Commission of Enquiry to Manchuria and Siberia, etc.

I beg leave to inform you that this statement is not quite accurate, for, although plague has been reported almost every year, either in the bubonic or pneumonic form, in Siberia, which possesses many endemic centres, *Manchuria* has only been visited by plague on two occasions, namely: October 1910—April 1911, and September 1920—May 1921.

On both occasions, the early cases had travelled from the endemic spots in Siberia. Manchuria itself has no endemic areas, and all bacteriological examinations of rats and marmots living in these regions have proved negative for plague.

Last week, before seeing your Report, I sent your Chairman a copy of our scientific Report, in which you will find original investigations upon this interesting problem.

We shall be glad to show your representatives, whenever they come, our specimens and offer them any information they may need.

Yours faithfully,

(Signed) WU LIEN TEH, M.D. (Cantab.),

Director and Chief Medical Officer.

Annex 6.

PROPOSED CO-OPERATION BETWEEN THE HEALTH SECTION OF THE LEAGUE OF NATIONS AND THE INTERNATIONAL SANITARY BUREAU.

Letter from the Union Panamericana to the Medical Director.

OFICINA SANITARIA INTERNACIONAL,

WASHINGTON, November 22nd, 1922.

My dear Dr. Rajchman,

I am sending to you by this mail a copy of the Proceedings of the Sixth International Conference, held at Montevideo, together with copies of the Bulletin of the International Sanitary Bureau, which is being published from the offices of the Bureau, situated at the PanAmerican Union at Washington.

It has occurred to me that it would be entirely possible and highly desirable to work out a plan of co-operation between the Health Section of the League of Nations and the International Sanitary Bureau, which confines its activities to the republics of the American Continent.

The work to be accomplished is so great that every effort should be made to avoid duplication of effort, and it has occurred to me that, through such co-operation, the International Sanitary Bureau, established at the PanAmerican Union, might serve as a clearing-house for information relating to the countries of the American Continent.

I have not as yet presented this to the Governing Board of the International Sanitary Bureau, as I am first anxious to secure your views with reference to the situation.

I beg to remain,

Very cordially yours,

(Signed) L. S. ROWE.

Dr. Ludwik RAJCHMAN,
Director, Health Section,
League of Nations,
Geneva.

Annexe 7.

INTERCHANGE OF PUBLIC HEALTH PERSONNEL.

Report by M. O. Velghe.

In conformity with the decision taken by the Health Committee, the first interchange of public health personnel from various countries took place in Belgium during the last quarter of 1922.

The Committee will no doubt wish for full information on this experiment, especially as it decided to await its results before taking any definite decisions on the organisation of future experiments. This is my reason for submitting the present Report. It would certainly have been preferable to entrust the drafting of the Report to another member. But it was suggested that I was best qualified to give an account of an experiment in which I alone of all the members of the Committee had taken part from beginning to end. I consented therefore to undertake this work, but intend to limit myself to a statement of the facts and to a report of the opinions of the public health officials who took part in the first experiment.

It opened on October 8th with a series of lectures and visits to health institutions, hospital establishments and public health installations.

The first period of work lasted until November 3rd, the following week being devoted by all the representatives to studying questions and visiting services or establishments which specially interested them and which had not been included in the general programme or had not, in their opinion, been given sufficient prominence.

This course of study and investigation was attended by twenty-one officials, two Belgians, one Bulgarian, four Italians, five Poles, five Russians, two Serb-Croat-Slovenes and two Czechoslovaks.

A large number of officials from the Belgian Health Administration and certain delegates from the Army Health Service and directors of health offices in the principal Belgian Communes also attended regularly the lectures and inspections.

On November 10th, the health officers dispersed to the various countries in which they were to undergo courses of practical instruction, the majority of them—one Belgian, one Bulgarian, five Poles, one Russian, one Serb-Croat-Slovene and two Czechoslovaks—going to Rome, where they were joined by two Austrians whose appointment by their Government had been made somewhat late. Four Italians took a course in Poland, one Belgian in the Netherlands, one Serb-Croat-Slovene and four Russians in Belgium.

Before beginning their practical course in Italy, the officials appointed for a course in that country attended a series of lectures specially organised for them by our eminent colleague, Dr. Lutrario.

All members taking the course were asked to send to the Health Section of the League of Nations, before completing the practical course, a report in answer to a questionnaire dealing both with this course of practical instruction and the lectures and visits.

These health officers finally met at Geneva on December 17th and 18th, to exchange views on the principle and methods of interchange of public health personnel.

We give below a summary containing the conclusions of these reports and discussions.

General Remarks.—The object of the interchange of public health personnel is to give persons taking part in such interchange some insight into the health legislation and into the organisation of the health services in other countries, and to give them an opportunity of learning how health questions have been solved in practice and the methods of applying Government regulation. Such interchanges, moreover, help to establish closer relations between public health officials, to inspire them with a common *esprit du corps* and a common ideal of progress and the unification of health regulations.

Our experience was decisive in all these respects. All officers taking the course agreed in laying emphasis upon the great advantages arising from such interchanges and in stating how much benefit they had derived from the first experiment.

They were also unanimous in stating that the best system was that of subdividing the course into stages consisting of lectures, visits and practical instruction, followed by a final discussion.

They all regretted, not that the programme of lectures and inspections had been too long, but that it had not been possible to devote more time to it; in view of the great number of subjects to be dealt with, there was hardly sufficient time for study and research.

It was also recognised that two main categories of medical health officers had a special interest in such interchanges: general practitioners and specialists. Amongst the latter we must distinguish between doctors who work in health laboratories and health officials whose duties are limited to a single subject, such as the campaign against malaria and tuberculosis, child welfare, protection of workmen from professional diseases, etc.

The system of interchange will naturally vary according to the category under consideration.

With regard to interchange of medical health officers who are general practitioners, it was also agreed that, in order to obtain the best results, it was essential to employ the most homogeneous system of grouping possible, and it was thought that officials taking the course should, in order to derive full benefit, possess some experience and hold or be likely to hold in their respective administrations a position carrying with it powers of initiative and direction, and affording an opportunity of exercising more or less wide influence.

Under these conditions, moreover, officials of central administrations and those of the executive services could both take part in such interchanges.

As the Governments were not supplied with adequate information regarding the methods on which the first experiment was to be conducted, those who sent delegates were unable to make a selection which would have assured an adequately homogeneous grouping of the health officers taking part in the experiment.

It was agreed that the length of the period of interchange could not be fixed in advance. The courses for health officers who are general practitioners must necessarily be more comprehensive than those intended for specialists, and the health organisations in the various countries differ widely, their institutions vary in number, and all countries have not reached the same standard of education in health questions.

Lectures.—According to Dr. Lutrario's Report, the subjects dealt with at the lectures were to be the methods employed by the health services in Belgium, her general and health legislative system, the characteristics of her political, municipal and health organisations and the present state of public opinion regarding the various health problems now under investigation. It was also agreed that a course should be given on international prophylaxis.

In accordance with Resolution II voted last August, the theoretical courses were limited to a statement regarding administrative legislation and organisation.

Twenty-six lectures were given in Belgium upon the following subjects :

- International Health Prophylaxis;
- Belgian Health Organisation;
- Government Health Inspection;
- Disinfection in Belgium;
- Organisation and Methods of the Ghent Health Bureau;
- Popular Health Propaganda;
- Reform of Nursing Sisters' and Midwives' Courses;
- Working-Class Houses in Belgium;
- Working-Class Houses and Garden Cities in Belgium;
- Reconstruction of the Devastated Areas;
- Waterworks System;
- Campaign against Tuberculosis in Belgium;
- Provincial Anti-Tuberculosis Service in Eastern Flanders;
- Prophylaxis against Venereal Diseases, together with propaganda films;
- Venereal Diseases, illustrated with lantern slides;
- Cancer Campaign;
- National Child Welfare Work;
- Medical Inspection of Schools and Physical Training;
- Professional Research Work;
- Spa Thermo-Mineral Waters;
- Medical Inspection of Labour in Belgium;
- Prophylaxis against Ankylostomiasis;
- Relations between the Government Health Service and the Army Health Service;
- Sanitary Organisation in the United States of America.

Those present were of opinion that, with the exception of one, all the lectures were practical and completely fulfilled their object.

No one complained that there were too many. Certain health officers even regretted that it had not been possible to touch upon certain other subjects as well.

A summary of these lectures was afterwards distributed to the audience. It would have been better to distribute the summary before the lecture, thus making it easier for those taking part, and especially for those with an insufficient knowledge of the language, to follow the lecture, to ask questions upon points not fully dealt with or to start a discussion on such subjects.

This disadvantage may have been mitigated to a certain extent by the fact that, having been for several weeks in touch with Belgian health inspectors, these officials had opportunities for obtaining from the former any supplementary information they desired.

Inspections.—Fifty-six visits were made to the following institutions and establishments:—

- Disembarkation from a vessel at Antwerp;
- Quarantine station on the Scheldt at Dool;

Hostel for emigrants;
Delousing station of the Red Star Line Shipping Company;
State vaccination office at Cureghem;
Government disinfection establishment in the province of Eastern Flanders;
Laboratory of the Public Health Department of the Ministry of the Interior and of Health;
Government health inspection laboratory at Bruges;
Social health dispensary at Roulers;
Ghent Health Office;
Ostend Health Office, with bacteriological laboratory and disinfection station;
Provincial analytical establishment of Eastern Flanders;
Provincial health and bacteriological institute of Namur;
Health institute of the province of Hainault and Health Museum at Mons;
Health institute of Ghent University and Health Museum;
Edith Cavell private nursing school at Brussels;
Private nursing school of St. Camilla at Brussels;
Provincial nursing school at Charleroi;
Nurses' home at Ghent;
Bruges maternity home;
Batavia Garden City at Roulers;
Ligy Cité at Ypres;
Kalfvaart Cité at Ypres;
Catchment installation of the waters of the Bocq;
Filtering Reservoir of the Vial system at Ostend;
Automatic pumping station for the residuary waters at Ostend;
"Lizzie Massily" sanatorium at Westmael-lez-Anvers;
Anti-tuberculosis dispensary at Ghent;
Sanatorium at Mont-sur-Meuse;
Men's and women's sanatoria at Hairé;
Men's sanatorium at Borgoumont;
Women's sanatorium at Maguée;
St. Idesbald sanatorium at Houthen-lez-Furnes;
Anti-venereal dispensary of the "Central-Klinick" at Antwerp;
Prostitutes' hospital at Liège;
Cancer institute at Brussels;
Maternity home at Antwerp;
School for the mentally deficient at Rixensart;
Convalescent home for children at Stoumont;
Mothers' and infants' welfare centre at Liège;
"Le Nid" at Ixelles;
The "Centrale Jumoi" dairy at Gozée;
Open-air sanatorium for children at Marcinel es;
School shower baths at Schaerbeek;
School swimming bath at Schaerbeek;
School clinic at Schaerbeek;
Open-air school at Schaerbeek;
School canteen at Schaerbeek;
Medical service for Ghent schools;
Model secondary school;
Cripples' school;
Baths institute at Spa;
Catchment of the "Marie-Henriette" spring at Spa;
Catchment of the "La Reine" spring at Spa;
Dispensary for parasitical skin diseases;
Anti-ankylostomiac dispensary;
Labour University.

All these visits provided practical lessons the usefulness of which the medical health officers fully appreciated. In all cases they were preceded or accompanied by a lecture explaining the working of the organisation in question, in order to point out its individual features.

One foreign delegate was of opinion that certain instances of overlapping might have been avoided, such as visits to hospitals or communal health offices, and that it would have been better to have devoted the time thus gained to the inspection of industrial establishments.

As has already been said, it was found possible to satisfy, to a certain extent, the particular desire thus expressed by means of individual visits organised after the collective visits of the delegates. To have acted otherwise—to have conducted all the delegates through the innumerable branches of the Public Health Service—would have required much longer time. However, the observation makes clear the necessity of taking into account, in organising exchanges, the character of the occupation and the degree of specialisation of the health officers taking part therein.

Course of Practical Instruction.—At the beginning of this report we pointed out that, in order to complete their course of practical instruction, health officers were sent to various countries, and they have everywhere been most cordially received.

In his well-considered and lucid report, M. Lutrario has already pointed out that the system of subdivision gave rise to certain difficulties, and his opinion was shared by several

our colleagues at the August session. The object of the preliminary lectures was to introduce the foreign health officers to the legislation and political and health organisation of the country in question, and also to the mentality, observances and customs of the population.

Those who took part in the Brussels exchange recognised the necessity for these preliminary lectures and emphasized this importance — lectures, visits and practical course form a logical whole. In order to understand the working and results of the health organisation of any country, we are told it is essential to know, first of all, the elements of the general geography, physical geography, and even ethnography of the country visited; secondly, the political legislation and administrative organisation resulting therefrom, the social legislation, with the public and private organisations which have developed as a result of its application, and health legislation, the organisation, both governmental, provincial, departmental, communal or municipal; and lastly, the methods employed for applying international health conventions.

If this is so, the practical stage of the course of instruction can only be profitable if it takes place in the country in which the lectures and inspections have been organised; this has been decisively shown by the first experiment. But, as was pointed out during our last session, in order to be able to organise a course of practical instruction under these conditions, it will be necessary to limit the number of students to a strict maximum of twenty-five or thirty.

The health officers were unanimously of opinion that the practical course is the most essential part of the experiment, and that it must be regarded as of greater importance than lectures and inspections, the only object of which is to prepare for this practical course and to render it easier and more profitable.

Should this practical course take place individually or collectively? Opinions on this point vary, and it would appear preferable to leave it to the organisers to decide according to circumstances. It has been recognised, however, that a practical course organised on collective lines may be preferable to an individual one, provided it is limited to a very small number of students. Moreover, a small number would be desirable in respect of visits of inspection, and even, to a certain extent, lectures also, as these would then become more intimate in character and would more readily afford an opportunity for questions and discussions.

Moreover, there was a general agreement that the course of practical instruction should be completed in various districts of a different character — urban, rural, industrial, seafaring, etc.

Conclusions. — 1. The first experiment in interchanges between the health personnel of various countries was a complete success. Apart from certain matters of detail, the chief of which is, undoubtedly, the concentration of lectures, visits of inspection and a practical course in one and the same country, this first experiment may serve as a model for future organised exchanges.

But it is important that the organisers should not be hampered by being confined within unduly narrow and rigid limits. The diverse character of the health organisations of the various countries should render it possible to adopt whatever methods might be considered desirable. It is indeed only by experimenting with new methods that it will become possible to appraise their merits and further the progress of the institution.

2. The programme of future experiments will have to be made known in sufficient time to enable the health administrations invited to take part therein to make a suitable selection from among their officials. The more homogeneous the grouping of the health officers appointed, the more fruitful will be the results.

In this connection, the Committee would do well to decide that two of the four experiments to be organised in 1923 should be allotted to general practitioners and that two should be reserved for specialists; one of these latter should be allotted to assistants in health laboratories and the other specialists in one particular disease, such as malaria. The average period for the latter two experiments would be six weeks.

3. The action taken by the Rockefeller Foundation was inspired by a desire to start the new institution in order that, when its usefulness had been fully demonstrated by facts, the League of Nations should be able to ensure its continuance. A credit of 100,000 francs for the purpose of furthering the organisation of closer relations between the health services of the world was applied for, for this purpose (Resolution III adopted at the meeting held on August 17th, 1922). In order to afford the Rockefeller Foundation guarantees of permanence, the League of Nations should at once, undertake to bear part of the expenses involved by the interchange of health personnel, and it would be desirable for this share to be successively increased in the following years, in order to cover the whole of the expenses when the assistance given by the Rockefeller Foundation comes to an end.

Annex 8.

INTERCHANGE OF PUBLIC HEALTH PERSONNEL IN ITALY.

(November 11th to December 16th, 1922.)

By Dr. LUTRARIO.

I.

The first experimental interchange of public health personnel in Italy, which took place from November 11th to December 16th, 1922, may be divided into four periods.

The first was spent in Rome, and was devoted to a series of lectures designed to give a general idea of the Italian organisation of public health and the manner in which certain problems relating to public health had been solved in Italy, and to excursions for the purpose of examining the operation of the various health institutions.

The second period, spent outside Rome, was devoted to the examination of health institutions which are of exceptional importance in the field of public health.

The third period was more specially devoted to a detailed consideration of the manner in which the principles of Italian health legislation are applied in the provinces and the communes.

The fourth period, which was a very short one, was spent at Milan, where the visitors met before their departure for Geneva.

First Period. — Rome, November 11th to 22nd.

The visitors were invited on November 11th to the Office of Public Health by the Director-General of Public Health, who made a general statement of the programme of work which had been planned; the programme was approved by the visitors, by the Director of the Health Section of the Secretariat of the League of Nations and by the Medical Director of the Rockefeller Foundation.

The first working day, November 12th, was devoted to a visit to Hadrian's Villa, near Tivoli, where the imposing remains still make it possible to visualise what was known in imperial Roman times as the Palatium; special attention was given to certain constructional features: mortars, for instance, the various building materials, and the arrangement of the rooms, including the premises specially devoted to physical culture, the "pœcile", baths, etc.

On the morning of November 13th, Professor Devoto, Director of the Clinic for Professional and Occupational Diseases in Milan, lectured, (in the Micrographical and Bacteriological Laboratory of the Office of Public Health), on the "Health Protection of Labour".

In the afternoon a visit was paid to the Forum and the Palatine, where there are the most ancient existing examples of sewerage and subterranean drains (some of which are still in working order), and of other sanitary works, such as damp-proof courses, various systems of tombs, disposition of corpses, etc.

On November 14th, Professor Gasparini, Health Officer of the city of Florence, delivered a lecture to the visitors on the supervision of mineral springs and baths, which abound in Italy, and which are subject to special provisions under recent laws and regulations.

In the afternoon, a visit was paid, first to the Museo Nazionale (Baths of Diocletian) and then to the magnificent Baths of Caracalla. The visitors were thus able to form an idea of the various systems of medical and surgical therapeutics and of physical culture used by the ancient Romans, who attached great importance to these matters.

On November 15th, Professor Di Vestea, Director of the Health Institute of the University of Pisa, lectured on prophylactics against tuberculosis, with special reference to the propaganda which should be made by the State and by other public or private institutions and individuals. Such propaganda is clearly necessary in order to encourage the public to combat the disease. Finally, the lecturer gave details of the methods which he had formerly recommended and which are at present adopted in Italy, if not completely, at least in part.

In the afternoon, a visit was paid to the Italian Red Cross Sanatorium, "Cesare Battisti", built on the Monteverde Hill.

Afterwards a visit was paid to the new general hospital, "La Victoire", which is being constructed through the good offices of the Pio Istituto di S. Spirito ed Ospedali Riuniti di Roma. When completed, the hospital will be able to accommodate 1,500 patients.

On November 16th, the Malariological School of Nettuno was visited and Professor Gosio, Director of the Micrographical and Bacteriological Laboratory of the Office of Public Health, made first a statement on propaganda as the best auxiliary of the campaign against malaria. The lecture was given, as stated above, in the apartments of the Malariological School. This institution is entirely Italian. It was founded by the Office of Public Health in order to train

the best efforts of the country to the application of the various minor measures recognised as most effective in the campaign against malaria, the utility of which is now accepted without question, particularly as a necessary complement to the more important measures of prevention.

The lecture was followed by a demonstration of the various methods used and of their application in practice.

On returning, a visit was paid to the Military Health Camp at Anzio, established along the seashore in the midst of a pine forest, consisting of movable structures for the accommodation of tuberculous soldiers.

On November 17th, the morning was spent in visiting the "Preventorium E. Mariani", administered by the Italian Red Cross. This institution receives infants born from tuberculous parents immediately after their birth. The infants have the advantages of treatment in surroundings free from any tuberculous infection, and they remain there until the age of three years.

The visit to the institute was made under the guidance of Professor Valagussa, who delivered a lecture stating his views on latent tuberculosis in infants.

In the afternoon a visit was paid to the Institute of Puericulture at St. Gregorio al Celio. The foundation of this institution was due to the initiative of the Office of Public Health, which continues to afford it effective support. It aims at spreading the observance of health rules in the feeding of infants, either by their mothers or foster-mothers or by artificial foods, at educating young girls for the profession of children's nurses, and at inculcating into young teachers in country schools the rudiments of child welfare.

In order to carry out this huge task, the institution has special sections devoted to foster-children, to weaned children, to nursing classes, etc.

On November 18th, in the morning, Senator Sanarelli, Director of the Health Institute of the University of Rome, lectured on "Fresh Views on Pathogeny and the Prophylaxis of Infectious Diseases of the Intestines".

In the afternoon a visit was paid to the two institutions specially devoted to the care of children, *i.e.*, the Anti-Malarial Sanatorium of Grotta Ferrata and the Anti-Tuberculosis Sanatorium of Ariccia. Both are in the Alban hills, and the first, which was founded by private initiative and supported by the Office of Public Health, receives malarial children, who are given the benefit of the best anti-malarial prophylaxis and receive an education designed to fit them more particularly for agricultural pursuits, since the little patients are nearly all the children of peasants.

The Anti-Tuberculosis Sanatorium of Ariccia, which must be regarded as an amalgamation of a charitable institution supported by a Roman patrician family and the admirable initiative of a political Roman newspaper (the *Giornale d'Italia*), receives poor children who have tendencies to tuberculosis, or who are suffering from tuberculosis of the bones or other forms of local tuberculosis.

On November 19th, an excursion was made to the ancient town of Ostia which was theemporium of republican and imperial Rome, where the sanitary installations of the ancient Romans, and particularly the plan of the city, and the lead pipes for supplying the town with drinking water, the drains, public lavatories, domestic architecture, markets, etc., can still be examined.

On November 20th, Professor Alessandrini, Professor of Parasitology at the University of Rome, lectured in the morning on the problem of the prophylaxis of exanthematic typhus in relation to the biology of lice, laying stress upon the necessity of using methods in the campaign against vermin commensurate with the means of defence with which these parasites are provided. In the afternoon there was a practical demonstration of methods in use in the campaign against vermin and even of preventive measures. Information was also given in regard to the emergency and other methods adopted by the Office of Public Health which enabled that office to equip without delay a complete sanitary station specially adapted for the prophylaxis against typhus, including delousing sections, disinfecting sections, sections for medical inspection, isolation of patients, etc., etc.

On November 21st in the morning, the Director-General of Public Health, Dr. Lutrario, explained the organisation of the health services in Italy.

After explaining the fundamental conception of the Italian health legislation (which is based on the centralisation of the various activities, without, however, suppressing local initiative), the Director-General examined the manner in which this conception had been put into effect by the original law of 1888 and by subsequent legislation which constituted an organic whole, at once simple and complex, elastic and powerful, conceived with a view to encouraging and supporting local initiative and at the same time of co-ordinating, regulating and directing these efforts to the desired end.

The Director-General then proceeded to examine the organisations and the work of the Italian Health Administration.

As regards its executive organs, these might be considered first as individual and collective by reason of their nature and their constitution; but, from the point of view of their functions, they might be grouped in four categories, that is to say, direction, action, consultation and scientific research.

In regard to their functions, the Director-General made a complete survey, though necessarily brief one, of the matters regulated by health legislation and particularly:

(a) the various forms of medical, surgical, obstetrical, pharmaceutical and hospital health assistance; (b) the organisation of the services of prevention against infectious diseases; (c) the various forms of subvention and co-ordination by the State, either in the form of money or by the use of the State prophylactic equipment, or by the provision of the services of a specialised personnel in the case of epidemic outbreaks in the kingdom; or by subsidies or loans at interest for the establishment of works of public health, the installations for the supply of drinking water, aqueducts, etc.

Finally, the Director-General referred to the more important work accomplished in the field of public health, such as urban sanitation, preventive measures against malaria, aqueducts, pointing out the advantages derived by Italy from these measures, which are confirmed by biometrical statistics.

On the same day, in the afternoon, the Director-General showed the visitors the various and complete prophylactic equipment of the Office of Public Health. This demonstration took place in the central depot of prophylactic equipment, a huge building extending over 6,000 square metres, to which are attached workshops for the repairing of medical plant, etc.

On November 22nd, Professor Ducrey, Director of the Dermatological Clinic, of the University of Rome, lectured on the prophylaxis of venereal diseases, and outlined the fundamental features of this prophylaxis and the legal provisions and regulations in force in Italy. Finally, a visit was paid to Professor Ducrey's clinic and the other clinics attached to the Policlinico Umberto I.

In the afternoon a rapid excursion was made to the Garden City at Aniene, which is under construction and will be composed of a number of small villas and houses each accommodating one family.

Second Period. — Naples and Ferrara, November 23rd to December 3rd.

The kindness displayed by the prefects of Naples and Ferrara and by the mayors, who extended the warmest welcome to their guests and did everything in their power to assist them, made the excursions to Naples and Ferrara highly successful.

On November 23rd, after the arrival of the party in Naples, a visit was paid to the public laboratories of health and sanitary surveillance, which consist of two sections, the bacteriology and micrography section and the chemistry section.

November 24th was devoted to visiting institutions for the protection of ailing children with tuberculous tendencies and foundlings. These institutions, which are situated in some of the most lovely spots on the Bay of Naples, are as follow:—

1. The "Pausilipon" Institute, consisting of (a) A hospital for the various ranks of medical services, to which is attached a helio-therapeutic station, founded by the Office of Public Health. The hospital is provided with premises for the segregation of persons suffering from contagious diseases and with disinfecting installations. (b) The "Villa Santobono" Preventorium, for children with tuberculous tendencies; the patients receive dietetic and medical treatment and also go through courses of scientific physical culture.

2. The "Scugnizzi" School at Marechiaro, which provides a home for foundlings, orphan and the children of tuberculous parents. These children are classified in various groups according to their special aptitudes (farmers, fishermen, etc.).

On the same day a visit was also paid to the Piedigrotta installations — one of the most important points in the city's sewage system. These works are of great technical interest, in view of the differences of level in the city of Naples, which rises from sea level to a height of 15 metres.

The Italian Sero-vaccinogenous Institute, which is under the charge of Professor Bandiera of the University of Naples, was then inspected.

In the evening "l'Ordine dei Medici di Napoli" held a reception, at which the president explained the aims and work of that body. The guests included the prefect, the mayor of Naples and the vice-principal of the University.

November 25th was spent in visiting the more important of the Torre Annunziata Works, which manufacture macaroni and similar preparations (*pâtes alimentaires*) and grind wheat.

The various systems used in the manufacture of these cereal products were examined and also the sanitary and prophylactic arrangements against the spread of plague by rats. The arrangements have been in operation for some time and have been found highly effective, especially at Torre Annunziata, where, in view of the large imports of corn (about 260,000 quintals per month) the danger of the introduction and dissemination of plague has always to be guarded against.

In the afternoon a visit was paid to Pompeii, where, as at Ostia, the students had an opportunity of studying an ancient city recalling the glories of imperial Rome.

The programme for November 26th included: (a) A visit to the Naples Red Cross Committee Sanatorium for tuberculous patients at S. Gennaro, near Pozzuoli, situated in a district of the greatest beauty, with a magnificent panoramic view of the sea;

(b) A visit to the Agnano baths, where there are mineral baths of different kinds, thermal baths, mud baths, a sudatorium, carbonic-acid baths and massotherapeutic, hydrotherapeutic and radiotherapeutic installations;

(c) A visit to the Pozzuoli sulphur deposits, which are of great interest as being of volcanic origin;

(d) An inspection of the sanitary work carried out in the lower part of Pozzuoli, where the soil has long been sinking;

(e) A visit, at Capodimonte, to the great reservoirs of Serino drinking water, which supply a part of the city of Naples.

On November 27th a visit was paid to the sources of the Sele, where there are important catchment works intended for supplying the provinces of Foggia, Bari, Lecce and Potenza with water.

The engineer who completed the design for the great aqueduct explained the working of the whole catchment system. An account of the various installations, and especially those connected with public health, was given by the head of the Aqueduct Public Health Office.

As a result of a motor-car mishap, the visitors had to spend the night at Contursi and Caposele, and could not return until the afternoon of the following day.

During the forenoon of November 29th, some of the party inspected the Maritime Health Service of the port of Naples, and especially the Health Office, the Sanitary Station and the Emigration Services.

In the afternoon the whole company left for Ferrara.

On the afternoon of November 30th, at Ferrara, in a hall belonging to the "Consorzio della Grande Bonifica Ferrarese", the Under-Director-General of Public Health lectured on Italian legislation dealing with the more important improvement works, stressing its relations between these works and sanitary law, laws and regulations against malaria, and the minor improvement works. In the province of Ferrara more than 100,000 hectares of ground have already been dealt with. This land is almost immune from malaria and supports a large agricultural population.

December 1st and 2nd were spent in visiting territories subjected to this treatment, particularly in examining the work done at Bondeno, Pilastresi, Argenta, Berra, Jolanda di Savoia, Modigoro, Lagosanto and Marozzo.

Third Period. — December 4th to 13th.

During the period which the visitors spent in the various places, the provincial medical officers, acting in accordance with instructions received from the Office of Public Health, carried through the programme which had been laid down. The provincial medical officers made a special point of supplying the visitors with information regarding the working of the State health services in the provinces, in order that the foreign doctors might—so far as the limited period at their disposal permitted—observe the working of the provincial and communal health services.

Details of the visits in each place are given in appendices 1 to 5.

Fourth Period. — Milan, December 14th to 16th.

The visitors had been invited to meet at Milan before leaving for Geneva. On December 14th, all were present at the Office of the Provincial Medical Health Officer in Milan. On the following day, at their own request, they visited the clinic for professional and occupational diseases, of which Prof. Devoto, the Director, gave a most interesting account. Finally, on December 16th, the whole party left for Geneva.

II.

Particulars regarding the doctors taking part in the first experimental interchange of public health officials.

(a) The following foreign officials went to Italy:

Austria: Dr. KAISER, Director of the Epidemiological Section of the Central Public Health Office, Vienna;

Dr. HAIMEL, Director of the Public Health Office in the Province of Gratz;

Belgium: Dr. HOLEMANS, Government Public Health Inspector, Ghent;

Bulgaria: Dr. GOLOSMANOFF, Director of the Infectious Diseases Branch in the Department of Public Health;

Kingdom of the Serbs, Croats and Slovenes: Dr. KRALJEVIC, Head of the Bacteriological Station at Trentinje;

Czechoslovakia: Dr. BAZANT, Medical Officer to the Public Health Office, Uzhorod (Czech Ruthenia);

Dr. FÜGNER, Ministerial Secretary to the Ministry of Public Health, Prague;

Poland: Dr. TREKNER, Chef de Service at the Ministry of Public Health;

Dr. POLACK, Acting Head of the International Conventions Bureau at the Ministry of Public Health;

Dr. ADAMSKJ, Director of the Public Health Department at the Ministry of Public Health;

Dr. LEBRUN, Editor of Publications at the Ministry of Public Health;

Dr. BOGUCKI, Chief Public Health Official in the city of Warsaw;

Russia: Dr. PYJOFF, Assistant Director of the Epidemiological Section of the Ukraine Public Health Commissariat.

The thirteen visitors included two Austrians, two Czechoslovaks, one Belgian, one Bulgarian, one Serb-Croat-Slovene, five Poles and one Russian.

(b) With the exception of Dr. Pyjoff, who arrived 48 hours late owing to formalities at the frontiers, the other members of the party reported on November 11th and all remained in Italy until December 16th. Dr. Heimel, however, who was to have gone to Florence, left on December 8th for Graz, being recalled on pressing public business.

Mention should also be made of the presence of Dr. Rajchman, Medical Director of the Health Section of the Secretariat of the League of Nations, who remained with the party until November 17th, and of Professor Gunn, of the Rockefeller Foundation, who remained until November 16th. Dr. Rulot, Member of the Health Section of the League of Nations, was with the party from November 17th to December 3rd, and Dr. Parodi from November 13th to November 30th.

(c) The most cordial relations were maintained throughout between the visitors and the Italian public health authorities, as well as between the visitors themselves.

It would therefore appear that the organisers of the interchange achieved their object of creating an *esprit de corps* and establishing closer friendly relations, which, beginning with individuals, may lead to reciprocal confidence and trust between the public health administrations of the various countries.

(d) All the health officers who were sent to Italy showed great keenness, both during lectures and when paying visits of inspection. They asked questions with the object of obtaining a clear idea of the various organisations and their functions. They frequently took notes of the main points discussed in the lectures, and they all worked enthusiastically during their visits to the provincial public health services to which they were allocated.

III.

General considerations regarding the organisation and working of the system of the interchange of personnel.

(a) *Organisation of the course.* — As already mentioned, the foreign public health officials arrived in Italy on November 11th and remained until December 16th, *i.e.*, for a period of 35 days.

On their arrival in Italy, after completing the first part of their course at Brussels, they had no information concerning the organisation of the health services in the kingdom. Lectures had therefore to be given to enable them to form an idea of the above-mentioned organisation, and to help them in carrying out their programme of work.

Nine lectures were given in Italy and they were spread over a period of twelve days, *i.e.*, third of the period of the visitors' stay. It proved impossible, however, to take up all the questions which had been placed on the programme, and a number of these questions — some of them, indeed, of vital importance — were only dealt with in a cursory manner.

Accordingly, at the close of the first period of the stay in Italy, *i.e.*, when the visitors had entered the field of practical application, their knowledge of public health legislation and organisation and of the great problems of social health was insufficient for the field of practical application. Moreover, the period of foreign study, strictly so-called (from December 4th to 14th—barely 10 days), was quite inadequate.

It would therefore appear that the carrying out of the course in two periods and in two different countries is not the plan best adapted to achieve the results which it is hoped to secure from the interchange of personnel. Judging from the experience which has just been gained, it would be better to complete the whole course of study in a single country, so that, when the theoretical and practical studies are completed—it would be desirable that these should take place at the central administration—the allocations may be made within the general organisations of the country chosen.

The advantages of such a system are clear, for the officials of the various States would be enabled to obtain a knowledge of the details of the organisation of the various public health services and, by extending their knowledge, would contribute to the establishment of closer relations between both individuals and between the various services to which they belong. Reciprocal confidence is the basis of international prophylaxis.

Another point has also been noted. The shortness of the period in Italy, and the necessity of drawing up a statement on the public health organisation of that country in the form of a general summary, subjected the visitors daily to an undue intellectual and physical strain. Naturally, this system makes objective first-hand criticism impossible, and, moreover, it leads to a rapid and confusing succession of ideas, which militates against any satisfactory study. Taken as a whole, these conditions involve a dangerous degree of over-work, which many students might not be able to undertake.

(b) *Number of visitors.* — The experience just gained has clearly shown the necessity of making the number of each group of visitors as small as possible. The number should not exceed ten or twelve. The fact must not be overlooked that the attendance of a crowd of visitors at practical demonstrations cannot but reduce the value of these demonstrations, which is inversely proportional to the number of persons present.

Moreover, when the groups are small it is easier to make successive allocations within the organisation of the provincial public health services and to ensure a more satisfactory distribution of effort.

APPENDIX I TO ANNEX 8.

PROGRAMME AT TURIN.

- I. Visit to the Municipal Health Bureau — method of work of the sanitary and prophylactic services, veterinary services and laboratories.
- II. Prophylactic Service: examination of the notifications of cases of infectious disease.
- Home disinfection.
- Disinfections at the municipal disinfection station.
- Transport of patients suffering from contagious diseases to the Amedeo Hospital, and visit to the hospital.
- Inspection of dairies, with relation to prophylaxis against typhoid fever.
- Daily examination of drinking water.
- Laboratory research.
- Tuberculosis: visit to the Preventorium: to the San Luigi and Birago di Vische sanatoria; to the prophylactic colony; and to the heliotherapeutic clinic ("Casa del Sole").
- Syphilis: visit to the dispensaries for venereal diseases; surveyance of wet-nurses.
- Hydrophobia: institute for vaccination against hydrophobia.
- Smallpox: vaccinations and re-vaccinations.
- Diphtheria: serotherapeutic prophylaxis.
- Anthrax: serotherapeutic prophylaxis.
- Scabies and pediculosis: visit to the special delousing section at the disinfection station.
- Schools: office procedure (examination, notifications, etc.). School inspections; read-mission of children removed owing to contagious diseases; shower-baths at the Pacchiotti school; visit to the Santorre Santarosa school.
- III. Sanitary services: surveyance of sanitary professions — professional registration — methods of work of the services of the "Condotte mediche e ostetriche" (medical and obstetric administrations) — list of paupers.
- First aid — permanent staff.
- Office procedure for conveying patients to hospital — visits to the following hospitals: San Giovanni, San Vito, Maurixiano, Maria Vittoria, Inf. Regina Margherita, Martini, Ricovero di Mendicità and Ospizio di Carità.
- Children's dispensary.
- Aqueduct and sewer, slaughter-house: visit to the installations of the Venaria, to the springs of the "Pian della mussa" and Valsangone, to the installations at Mirafiori — Conference at the Office of Public Works on the proposed sewerage scheme — visit to the main sewer; visit to the municipal slaughter-house and the cattle market; examination of a scheme for a new slaughter-house.
- Industrial establishments: procedure for issuing work cards to women and boys. Registration of the establishments; visit to the chief establishments equipped with medical rooms for first aid, motor ambulances, etc.
- Laboratories and scientific institutions; visit to the University institutions and the phytopathological laboratory.
- Health inspection and food supply. Registration; surveyance of public buildings — procedure for obtaining building and residence permits — police supervision; supervision of food supply — action of veterinary surgeons and "vigili"; markets, sale of cereal products (*substances alimentaires*); railway wharves — chemical laboratory — infringements and notifications to legal authority.

APPENDIX II TO ANNEX 8.

PROGRAMME AT GENOA.

Visits and Inspections.

- San Martino, Galliera, and Pammatone Hospitals.
- Anti-tuberculosis office.
- Heliotherapeutic station.
- Open-air schools.
- Public sea-water baths.

Night refuge and sanitary establishment attached.
Municipal disinfection station.
Motor service for schools and sanitary services attached.
Incinerator for household refuse.
Municipal motor ambulances.
Municipal schools for sufferers from trachoma.
Cemetery service.
Sampierdarena slaughter-house.
Sampierdarena Hospital.
Nicolai and De Ferrari Galliera aqueducts (water-filtering apparatus).
City Bacteriological and Chemical Laboratory.
University Health Laboratory.
Port Sanitary station and sanitary service.

APPENDIX III TO ANNEX 8.

PROGRAMME AT MILAN.

State policy in respect of hygiene and public health in the province.
Provincial and communal services in the capital for the prophylaxis of contagious diseases.
Municipal Health Bureau — Health Laboratory.
Permanent vaccination service — anti-tuberculosis dispensaries — disinfection stations — hospitals for contagious diseases — cemetery and Morgue — various hospitals — Foundling hospital (Brefotroffio).
Drinking water — sewers — market — food supply.
Public baths.
Supervision of schools — open-air schools; asylums and schools for the abnormal — sanitary services; ambulances — “Condotte mediche” — medical, surgical and obstetric first-aid posts — pharmaceutical services for the poor — distribution of milk.
“Maisons Populaires” — clinical convalescent institutes — asylums — municipal tuberculosis clinic — visits to the Health Bureau at Legnano and to the medical aid and prophylactic services for workmen — “Maisons Populaires” — sanatorium for consumptives.
Prophylaxis against venereal diseases (visits to the institutes, dispensaries and the hospital).
Sero-therapeutic Institute of Milan.

APPENDIX IV TO ANNEX 8.

PROGRAMME AT VENICE.

Explanation of the organisation and working of the Provincial Sanitary Office, the Port Sanitary Office and the Municipal Health Bureau.
Visits to vessels on arrival and during their stay in the port (execution of measures required by the regulations in force, destruction of rats, prophylaxis against plague).
Visits to establishments under the sanitary surveyance of the “Sylos”, to the mill and factory of the “Stucky” cereal products (*pâtes alimentaires*) and the San Marco brewery.
Visits to the port sanitary stations at Lido, Alberoni, Chioggia and Poveglia.
Visits to the Municipal Health Bureau and the chemical and bacteriological laboratories, and inspection of the hygienic and prophylactic services of the City of Venice.
Visits to the refrigerators at La Giudecca, Le Zattere and Marchera.
Visits to the City Hospital of Venice, the Umberto I. Hospital for children, the hospital for incurables, the hospital for infectious diseases at the Island of La Grazia and the San Marco tuberculosis clinic.
Visits to the Sailors' Hostel, the anti-tuberculosis dispensary and the clinic for healthy and tuberculous children.
Visit to the new commercial port.

Visits to the aqueducts of Venice, Mestre and San Donà di Piave.

Inspection of the works executed as prevention against malaria (bonificazione) at San Donà di Piave (Bella Madonna), Torre di Mosto, San Stino and Caorle (Bocca Fossa).

APPENDIX V TO ANNEX 8.

PROGRAMME AT FLORENCE.

Visits and Inspections.

Disinfection station of the City of Florence at the municipal wash-houses. Organisation of home disinfection service.

Mayer Hospital for Children — Foundling Hospital (Brephotrophe) and Maternity Hospital — Assistance to mothers — Careggi Sanatorium — Italian Red Cross Society's Hospital for persons with tubercular tendency — Queen Elena Sanatorium — School for trachomatous children — Open air school — Anti-tuberculosis dispensary of the "Societe Umberto I".

Installations for the supply of drinking water, reservoirs.

Installation for the destruction of household refuse (Beccari system).

"Maison Populaire".

Public baths.

Factory of "Conserve alimentari Torrigiani di Sesto Fiorentino" — Wool factory at Prato — Molteni chemical works.

Municipal Health Laboratory.

General Pathological Laboratory at Careggi.

Sewer and aqueduct at Siena.

Establishment of the "Bagni di Montecatini".

Annex 9.

THE POSSIBILITY OF ESTABLISHING INTERNATIONAL STANDARDS FOR REMEDIES, OTHER THAN SERA AND BACTERIOLOGICAL PRODUCTS, THE ACTIVITY AND SAFETY OF WHICH CAN ONLY BE CONTROLLED BY BIOLOGICAL METHODS.

Memorandum by Dr. H. DALE.

December, 1922.

During the past 20 years many papers have been published advocating the use of biological methods of assay and control for certain potent remedies. The idea doubtless originated with the demonstration of the possibility of accurate measurement, by a biological method, in the case of diphtheria antitoxin. Several among the potent and widely used drugs in the Pharmacopœia are, at the same time, notoriously variable and unsuitable for standardisation by chemical methods on account of the doubtful nature or unstable properties of their active principles. The practice of issuing preparations of these, with a statement that they have been physiologically standardised, has grown rapidly, and has been adopted by the most progressive pharmaceutical manufacturers of the United States of America and of Great Britain. In my own opinion, the value of the method has been somewhat exaggerated. The number of remedies of this class, for which a really active biological assay is possible, is not yet large, and it appears to me that, in some of the cases in which some kind of measurement of activity is possible, there is a lack of conclusive evidence of a direct connection between the activity measured and that which is therapeutically important. An idea of the present position can best be obtained by considering briefly the position of each of the drugs concerned and the nature of the various tests which have been recommended and applied.

1. *The heart tonics (digitalis, strophanthus, squill, etc.).* — These are the first drugs to which a biological method of assay was applied.

(a) *Digitalis.* — This is the most important and most variable member of the group. The chemistry is complicated and vague and the active principles easily destroyed in storage or preparation. There is a very extensive literature on the subject of its standardisation, but the results are, in some ways, far from satisfactory. Two chief methods are used, both dependent on the stoppage of the heart of the experimental animal by the minimum fatal dose. The most widely used method is that in which frogs are employed, but some American workers have recommended the use of the cat, the preparation being infused into a vein at a standard rate until the heart stops. The two methods give different results; one preparation may be stronger than another on the frog test, weaker on the cat test. Obviously different principles are predominant in the two effects, and there is no clear evidence as to which is the important therapeutic agent. Most workers have assumed that the toxicity measured by the frog test corresponds to the therapeutic potency for men. There is no real warrant for such an assumption, and the subject is one admirably suited for organised research. The present position does not warrant the imposition of an international standard without such further enquiry.

(b) *Strophanthus.* — The position is much better. Only one active principle is involved, and this can fairly easily be obtained pure. Measurement of the toxicity for a frog's heart gives a good measure of activity, as the frogs can be standardised by using the pure principle, so the results on the preparation can be expressed in terms of strophanthin. Strophanthus is less used and less variable than digitalis, but if physiological standardisation of its preparations is required, it ought to be upon an agreed basis; international agreement should be obtainable without much further investigation.

(c) *Squill.* — The position is very similar to that of strophanthus. The recent isolation of what appears to be the pure active principle should make the fixation of an agreed standard a simple matter if desired. It is doubtful whether the total amount of squill prescribed for its effect on the heart would make it worth while to take action.

The position as regards this group is, therefore, that an internationally agreed standard of activity should easily be obtainable for strophanthus and squill, which are the less important members. For digitalis, by far the most important, the frog-heart unit has been adopted by the United States Pharmacopœia, but its relation to the therapeutic effect is hardly established with such certainty that it could be recommended for international adoption without further investigation.

2. *Ergot* is another remedy concerning the biological standardisation of which much has been published. The active principles *specific* to ergot have been identified and prepared in pure form

and their position as the essential active principles is, in my opinion, clearly established. The ergot extracts in some of the Pharmacopœias, on the other hand, have activity due to other substances, which are not specific to ergot but are casual products of putrefaction, due to the methods of preparation. The relation of these various substances to the therapeutic action of ergot is not properly established, and the methods hitherto recommended for physiological standardisation are purely empirical. The whole question demands much fuller investigation before any method or standard could be recommended for international adoption; the result of such investigation might be to show that a chemical method of assay was applicable, or even that ergot, as such, had no proper therapeutic status.

3. *Cannabis indica* is an unstable and variable drug, which has not a large use in therapeutics. Its activity can be roughly measured by its effect on a dog, of which the sensitiveness to the effect of its narcotic principle is known by previous trial. The extract is unstable, and the active principle is very difficult to prepare and also very unstable. Some kind of international agreement as to the basis of testing could probably be reached, but the preparation and issue of an international standard sample would present great difficulties.

4. *Pituitary extract*. The extract of the posterior lobe of the pituitary body is a widely used and valuable remedy, the action of which may be dangerous if excessively powerful. The active principles are unknown and their isolation is unlikely. They are easily destroyed by *post-mortem* changes in the raw material or by careless extraction. The well-prepared extract, when kept sterile, deteriorates but slowly in activity. The activity of different preparations on the market is widely variable for two reasons: (1) the proportion of gland represented in the finished extract varies from 5 to 20 per cent of the fresh material; (2) the condition of the material extracted and the efficiency of the process of extraction vary widely.

The activity of the extract on the uterus (its most important therapeutic property) can be measured with reasonable accuracy — with an error of about 10 per cent. Its activity on the blood-pressure (representing its other main therapeutic function) can be measured with somewhat less accuracy. An international agreement as to the theoretical strength at which the extract should be issued, and as to the method by which the actual potency should be adjusted by comparison with standard would be valuable and should not be difficult to obtain. The last edition of the United States Pharmacopœia (U.S.A. IX) prescribed a theoretical strength for the extract and indicated a method of standardising the activity against a stable pure chemical (histamine). The method is admitted to be unworkable and erroneous by all concerned with its introduction. All responsible opinion in the United States, of which I have knowledge, is now in agreement with my own, that the only possible standard of reference is a pituitary preparation. The problem of preparing a *stable* pituitary standard has not yet been solved but should not be insoluble. Further details are given in the printed report by Burn and Dale, enclosed herewith¹. International discussion, leading to investigation along agreed lines, with a view to preparation and acceptance of a standard would, in this case, be valuable.

5. *Preparations of the supra-renal gland*, including solutions of the pure active principle of the medulla, adrenaline, are usually labelled as "physiologically standardised". There is no difficulty at all about accurate standardisation for adrenaline; with comparisons on the blood-pressure an accuracy of about 5 per cent is attainable. The standard is the pure chemical substance adrenaline.

6. *Thyroid gland preparations* doubtless vary pretty widely in activity. There are physiological methods, such as determination of the influence on the metamorphosis of tadpoles, which could be used to give a rough indication of activity. I doubt whether the indications so obtained would have greater accuracy than the relatively simple determination of iodine in organic combination. The matter is one which perhaps deserves discussion.

7. "*Insulin*" — the antidiabetic hormone of the pancreas. This is an important case in that the preparation has not yet passed into general use, so that there has been no opportunity for the development of different tests and standards in different countries. There is abundant evidence of the need for control, not only of the specific activity but of the freedom from harmful constituents, including pathogenic bacteria, of preparations made from pancreas and intended for use by injection. It is impossible to obtain sterile raw material from the abattoir, and the nature of the principle forbids sterilisation by heat, which can be used for pituitary extract. The method of measuring the specific activity is not yet well worked out. An agreement on standard methods would be highly beneficial.

8. — *The Salvarsan group of remedies*. These are in a peculiar position in that the principal ones are the subject of German patents in several countries. The outbreak of the war necessitated special arrangements in some of these countries (Britain, America), and the patents are now to varying degrees effective. In Britain several firms make these products under licence from the Board of Trade, which collects royalties on behalf of the patentees. As manufactured by the patentees, Salvarsan was subjected to a test for toxicity on mice. In neither Britain nor America was the test, as described, with hypodermic injection of the drug, found to be workable. After various trials, a test carried out by intravenous injection was adopted in both countries, mice

¹ Not reproduced here.

being used in England, rats in the United States. In both countries every batch is officially tested, in the Public Health Department at Washington under the law governing the inter-State traffic in biological remedies, and under the Medical Research Council in England, as a condition of the licences issued by the Board of Trade in connection with the patent.

In the case of Neosalvarsan no statement of control for toxicity or other properties has been made by the German patentees. The directions for manufacture in the patent specification are by no means so full and explicit as in the case of Salvarsan, the remedy being made by a process to some extent secret. It has been found necessary, both in Britain and America, to introduce tests for the toxicity of the various products which, more or less closely, represent Neosalvarsan. In addition, it has been found that small variations can be introduced in the process of manufacture, which, while giving products of low toxicity, impair the therapeutic potency. It has therefore been necessary to introduce tests for therapeutic potency. In both countries tests are now being used which are based upon determination of the dose needed to clear mice or rats of a standard infection with a trypanosome (*T. equiperdum*) in a standard time. Mice are used in Britain, rats in America; the strains of *T. equiperdum* are different, and the stipulations as to intensity of infection and time of complete disappearance are not the same.

On all points such as these, international agreement is highly desirable, and, so far as Britain and America are concerned, probably attainable without difficulty. The attitude of Germany, in view of the existence of unexpired patents for these remedies, may create a difficulty in the way of international agreement.

The authority for imposing standards.

While the need for biological standards, and the desirability of making these international, is as obvious in the case of some of the remedies here considered (e.g. pituitary extract, insulin, Salvarsan) as in that of the immune sera, the authority for their imposition would not necessarily, in any one country, be the same. In the United States of America, where the control of sera and other bacteriological products, at least for "inter-State traffic", is clearly established by law and exercised by the Federal Public Health Service, of substances mentioned in this memorandum only the members of the Salvarsan group have been held to come within the purview of this control, and even they appear to have been included by a somewhat ingeniously strained interpretation of the Act. For the rest, methods of biological assay were introduced into the last edition of the United States Pharmacopœia. In Great Britain there would probably be no difficulty in persuading the authority (Pharmacopœia Committee of the General Medical Council) responsible for the Pharmacopœia to introduce directions, in the case of any of these remedies which are included in the Pharmacopœia, to the effect that the indication "Physiologically standardised" shall signify that the preparation so labelled has been physiologically tested in accordance with the internationally accepted method and adjusted to the international standard, when such methods and standards exist. This probably represents the limit within which such standards could be made effective in several countries. The idea of a Pharmacopœia has been a code of directions for the preparation of widely used remedies, such that any qualified pharmacist should be able to follow them; and it would certainly be difficult, in the case of well-established and familiar drugs like digitalis, to make obligatory procedures which could only be followed by the manufacturer possessing a well-equipped biological laboratory, or having easy access to such. To establish, however, that the description "Physiologically standardised", whenever used, should have reference to a definite and internationally accepted standard, and not as at present, to some unknown standard set up by the manufacturer himself, would be a solid achievement.

It was recently stated by the Chairman of the Pharmacopœia Committee (the President of the General Medical Council) of Great Britain, that his Committee had felt it impossible to include certain remedies in the Pharmacopœia, on account of the facts that no method of measuring their activity existed except a biological method, and that no authoritatively prescribed biological standard was available.

It should be noted that a measure of international agreement, with regard to some of the drugs with which this memorandum is concerned, has been reached by an "International Conference respecting the Unification of the Formulæ for Potent Drugs and Preparations" in the several national Pharmacopœias (1902). The States participating in this conference made a series of recommendations commonly referred to as the "International Agreement". The various national pharmacopœias issued since the date of that conference have adopted modifications which make uniform the proportions of drug to solvent used in preparing the tinctures of digitalis and strophanthus, for example. In view of the admitted fact that, since no chemical standards for these preparations are available, the appearance of uniformity so obtained may be quite illusory, the effort to obtain international agreement on physiological methods and standard would be an obvious corollary and practical development of this "International Agreement". It is one, however, which the Pharmacopœia Committees of the several countries concerned are unlikely to promote by their own action. Their attitude would probably be simply one of readiness to adopt, by reference, standards set up by some other international authority. It should be noted, further, that several of the remedies above considered — pituitary extract, insulin, Salvarsan — are administered by parenteral injection, and are on much the same footing with regard to danger from imperfect sterility, abnormal toxicity and irregular activity, as some of the immune sera and bacterial products.

My conclusion is that an international conference, following somewhat similar lines to the International Serological Conference, could do valuable work in the direction of establishing

international standards for this smaller group of remedies. I would suggest that the field of activity of such a conference should be defined as "remedial agents, other than immune sera and bacterial products, needing control or standardisation by biological methods". I would suggest that, since the field of activity so defined is a comparatively small one, the membership of such a conference should be correspondingly small — not more than three from each country participating. If it should be decided to call such a conference, it would be useful to have in mind the fact that the International Physiological Congress is to meet in Edinburgh during the last week of July, 1923. If a conference on standardisation were arranged in convenient relation to that Congress — in the middle of July or early in August — the difficulty and expense of arranging for adequate representation from America would probably be very small. Since the biological standardisation of drugs originated in the United States, and has been more systematically studied and advocated there than in other countries, this would be an important consideration.

Annex 10.

STUDY OF MALARIA IN ITALY.

(Telegram addressed to Dr. Lutrario.)

ROME, January 11th, 1923.

Approve proposed meeting in Italy of malaria experts.

FINZI.

Annex 11.

REPORT ON THE DISCUSSIONS OF THE MIXED OPIUM SUB-COMMITTEE BY DR. H. CARRIÈRE.

At the last session of the Health Committee, held in August 1922, it was decided to replace the Opium Sub-Committee of the Health Committee by a Mixed Sub-Committee to be composed of members of the Health Committee and of the Advisory Committee on Opium. The duty of this Mixed Committee was to maintain contact between the two organisations, to avoid overlapping and to consider the important questions of a medical nature which would be submitted to it by those organisations.

By virtue of this decision, the Mixed Committee was composed as follows: For the Health Committee: M. CHODZKO (replacing Dr. MIYAJIMA, at present in Japan), Dr. SANTOLIVIDO, Dr. CARRIÈRE. For the Advisory Opium Committee: Dr. ANSELMINO, Mr. CAMPBELL.

You will doubtless remember that the Opium Sub-Committee of the Health Committee had been entrusted with the duty of examining the results of an enquiry which had been undertaken in respect of a certain number of States with a view to eliciting their legitimate requirements in opium, opium derivatives and other narcotic drugs. Small countries were selected for this enquiry, it being considered that they would be most suitable for the purposes of investigation, and that an average might be struck from the figures obtained and a basis furnished thereby for subsequent regulations. Unfortunately, this hope has not been realised, and, with few exceptions, the results of the enquiry have been, in fact, somewhat inconclusive. A summary of the results of this enquiry was published in the Minutes of the Health Committee's session held in Paris in May 1922, and there appears to be no necessity for repeating it here.

This being so, the Advisory Opium Committee thought it necessary to proceed to a fresh general enquiry in respect of all the States signatories of the Hague Convention and other Members of the League of Nations, and the questionnaires were sent out in May 1922. The results of this

further investigation have been examined by the Mixed Sub-Committee, and the present report is designed as a statement of the Sub-Committee's conclusions. The Sub-Committee's duties were clearly defined in the following terms of reference:

1. To examine in the light of previous enquiries conducted by the Health Committee, of the figures furnished in reply to a circular letter sent to all the States signatory to the Convention and to other States Members of the League of Nations, asking them to state the total quantity of opium and of its derivatives considered necessary each year for the needs of home consumption.
2. To investigate with a view to evolving a satisfactory method of determining the quantities of opium, derivatives of opium and other noxious drugs required each year for the needs of the home consumption of the various countries.

In regard to the first item on this agenda, the Mixed Sub-Committee, after considering the figures supplied to it, was once more convinced that the results of the enquiry were not such as to lead to definite conclusions. The Sub-Committee had, it is true, figures supplied by eight countries, that is, South Africa, Canada, China, Czechoslovakia, Finland, Italy, Luxemburg and Norway. (It should be remembered in this connection that Denmark, Sweden and Switzerland had already, at the time of the Health and Opium Sub-Committees' enquiry, supplied details which, in their view, rendered it unnecessary for them to take part in the new enquiry.) But the difference between the two methods of enquiry made comparison very difficult and definite conclusions still more difficult. Certain States had, in fact, applied directly to chemists, doctors and hospitals to discover the quantities of narcotics used by them. Others had only deducted the exports from the imports and had added to the figure thus obtained the figure for production and had given the result as representing the quantity necessary for the legitimate requirements of the country. The faultiness of this last method is obvious, in that it gives, in fact, only the quantities consumed within the country, without giving any precise indication of how far this consumption is for legitimate purposes. Nevertheless, the results of the new enquiry, as those of the previous enquiry, reveal common factors, which, if they are not merely accidental, lead to the supposition that it should be possible to arrive by a carefully chosen method at useful results and establish with sufficient accuracy an average which could be equitably applied to all countries and serve as a basis for regulations. The task of the Mixed Sub-Committee has been to endeavour to determine such a method.

However, a preliminary question arose which it was necessary to solve, because the principle—or at any rate the means of carrying out the methods of enquiry—depended upon the solution arrived at. What was meant by "legitimate requirements"? The discussion on this point was very lively and revealed all the differences of opinion which are met with in circles interested in the opium question.

The Mixed Committee then considered the opinion which had already been put forward in the same sense as that of the Health Committee, namely, that all consumption of narcotic drugs other than for medical purposes does not necessarily constitute an abuse, that in certain countries—e.g. in India—opium is a stimulant which is indispensable for certain labouring classes of the population, and that this factor must be taken into account in defining the requirements known as "legitimate". The medical members of the Sub-Committee replied to this argument that, in their view, the only legitimate requirements were medical requirements, that it was not desirable to legalise a form of consumption which must be regarded, in any case, as an abuse the suppression of which should rather be aimed at; this was the point of view which was finally accepted, though not until Mr. Campbell—who had defended the opposite point of view—had made a formal reservation.

Having established this point, namely, that legitimate requirements are exclusively medical requirements, which term should no doubt include the employment of opium and its derivatives for scientific purposes, the Sub-Committee was able to proceed to the consideration of the methods of enquiry.

Having regard to the results of previous enquiries, the Sub-Committee was of opinion that it would be impossible to adopt a single method, that methods which might suit the organisation and customs of one country might not be applicable to another, and that it was therefore necessary to consider the possibility of employing various methods. In addition to the necessity, imposed by force of circumstances, of employing various methods, it should also be pointed out that it would be desirable to conduct parallel enquiries in one and the same country, since a comparison of the results of such enquiries would give them greater exactness and certainty. After a discussion, the Mixed Committee agreed upon the following methods:

- (1) To utilise the statistics relating to imports, production and exports, as has already been done in certain countries.

We have already pointed out that this method is unreliable, but at least it makes it possible to work out very roughly the total consumption of a country, and, as we shall see later, it is of practical importance to determine this total.

- (2) To make enquiries, as has been done already, from hospitals, chemists and doctors who dispense medicines, and no doubt also from dentists and veterinary surgeons. If the replies obtained in this way were reliable, this method would no doubt be the one calculated to give the best results; it will be for the authority carrying out the enquiry to see as far as possible that these answers are reliable.

- (3) The third method is based upon principles which, if we are correctly informed, have not yet been applied. It consists of: first, ascertaining the general incidence of disease in a country by reference to the statistics compiled by health insurance funds; and second,

by ascertaining, by enquiries from a limited number of general hospitals, the average consumption of narcotic drugs per patient and per year. By multiplying the first total by the second it would seem possible to obtain—very roughly it is true—the total legitimate requirements.

This method is interesting, but it is open to certain criticisms. Thus, it is no doubt true that the morbidity of persons insured in health insurance funds is higher than that of non-insured persons, for the simple reason that as insured persons do not have to pay the doctor, they call him in more frequently than do uninsured persons. But that is a factor of which statisticians can gauge the value, and of which they can take account in their calculations. On the other hand, it is equally true that in a general hospital, narcotic drugs are not used for all the patients, so that the figure obtained by dividing the total annual consumption of the hospital by the number of patients would be too low. We shall thus have two sources of error, but it may be assumed that they will compensate each other up to a certain point.

It is, moreover, evident that this method of enquiry can only be adopted in countries where the health insurance funds are more or less officially organised.

Finally, it was pointed out in the Mixed Sub-Committee that as soon as the system of import and export licences recommended by the Advisory Committee on Opium is brought into general application, together with the supervision which it entails, we shall possess exact statistics which will no doubt render all other methods of enquiry superfluous, but this condition is not yet fulfilled.

Before leaving the question of methods of enquiry, we would like to say a few words about the first of the methods referred to. We pointed out that this method, being based on imports, production and exports, could only give the total consumption of the country, but if parallel enquiries were carried out, it would be possible, by comparing the results given by the first method with those obtained by the second or third methods, to determine, within certain limits, the extent of the illegitimate consumption.

Such were the results of the discussions of the Mixed Sub-Committee, and it appeared that, when these points had been settled, its task was completed. However, His Excellency Monsieur Chodzko thought that it was not sufficient to make enquiries and to accumulate more or less reliable figures, but that it was more important to lay down the principles for a programme of action in the campaign against the abuse of narcotic drugs. He thought it was especially desirable that an agreement should be reached regarding the system of control, which he thought should be very strict, to which the production of these drugs should be subjected.

The Mixed Sub-Committee considered, however, that such proposals should not be submitted to it, rather to the Health Committee and to the Advisory Committee on Opium. It will therefore be for Dr Chodzko, if he thinks fit, to explain to the Health Committee, during the discussion which will take place on the present report, the views which he had intended to maintain before the Mixed Sub-Committee. If these proposals are accepted by the Committee, they can be communicated, together with his reasoned statement, to the Council of the League of Nations, which will communicate them, if it thinks fit, to the Advisory Committee on Opium.

As regards the enquiries themselves, if the Health Committee approves the proposals of the Mixed Sub-Committee, it will be the duty of the latter to carry them out in the method which it thinks best calculated to furnish conclusive results.

Annex 12.

REPORT OF THE SUB-COMMITTEE ON PUBLIC HEALTH MEASURES IN THE NEAR EAST IN RELATION TO THE NEW TURKISH PEACE TREATY.

GENEVA, January 9th, 1923.

The convocation of the Peace Conference at Lausanne signified that the representatives of the Allied Powers and Turkey would be called upon to discuss the settlement of several public health questions of importance in relation to quarantine and the prevention of the spread of epidemic diseases in the Near East. Certain of these questions had already been closely studied in the early part of 1922 by the Near East Health Commission of the League. The report of this Commission contained, it will be remembered, recommendations on the essential principles on action which should be taken in the Straits and also in other ports of the Near East which before the war were under the jurisdiction of the Superior Board of Health of Constantinople. In illustration of these principles, the Commission had suggested certain new articles for insertion in the next International Sanitary Convention relating to the sanitary defence of the Straits and of the Mecca Pilgrimage.

In these circumstances, the Chairman of the Health Committee decided to request Monsieur Velghe and Sir George Buchanan to form, under his chairmanship, a Sub-Committee, (1) with the duties of preparing a memorandum on the expert opinion submitted to the League on these questions, and (2) to be at the disposal of the Council for any advice which the Council might desire it to give on the matters dealt with in the memorandum.

The Sub-Committee accordingly prepared, on November 4th, a memorandum (C. H. 45), copies of which have been circulated to all members of the Health Committee.

Since this was done no further application has been made to the Sub-Committee for advice and consequently no meetings have been held.

Sir George Buchanan has informed the Sub-Committee that, in the capacity of a British Delegate, he attended a meeting of a technical Sub-Commission of the Peace Conference at Lausanne on January 5th last. The question of the public health clauses to be inserted in the Treaty was then under consideration, and it was evident that the recommendations of the Near East Commission were being taken by both sides as an important and authoritative guide to the technical questions at issue. No decision has so far been arrived at, but it should be observed that no objection was made by the delegates, including the Turks, to the principle that important public health bodies of an international character, such as are suggested for the control of the Straits and for the Mecca Pilgrimage, should be placed in official relation with the League of Nations Organisation and with the Office international d'Hygiène publique — for example in the manner proposed by the Near East Commission in Article 154 of the annex to its report.

Annex 13.

PILGRIMAGES TO THE HOLY PLACES.

(Note by Dr. Lutrario.)

MINISTRY OF THE INTERIOR

ROME, November 27th, 1922.

Dear Sir,

I have received the Note containing the technical opinion regarding the health measures to be taken in the Near East which was drafted by the Sub-Committee composed of Professor Madsen, Sir George Buchanan and M. Velghe. The Note concluded with the recommendations adopted by the Committee of the International Health Office at the last session in October of this year. I think that, in order to obtain a better idea of the great importance of the three recommendations put forward at the end of the Note, it would perhaps be useful to add, for your information, a summary of the discussion which took place with regard to the three recommendations.

I do not think that I should give a summary of the discussion which took place on this subject, particularly in the Committee which was entrusted by the Committee of the Health Office to examine the draft amendment to Chapter II and the following chapters of the International Convention of 1912. As you are aware, this draft amendment had been considered and was proposed by the Committee, which, having been authorised and delegated by the League of Nations, proceeded in February last to the Near East.

I think that I must confine myself to that part of the discussion which concerns me, particularly as regards the second and third recommendations.

In this connection I think it desirable to transmit to you a note (Appendix) summarising my views on the pilgrimages — views most of which I expressed repeatedly to the Paris Committee. This note sufficiently explains the purport of the second and third recommendations.

I should like, however, to give you some further explanation.

As regards the second recommendation, I laid great stress on the necessity of establishing on all the main lines of railway in the East, quarantine stations to deal with the health of pilgrims. This matter is of primary importance. The tendency is for the pilgrims to abandon the old sea routes and to travel by rail, which is much more rapid and economical. This tendency, with regard to which I have definite information, clearly indicates the desirability of giving fresh scope to this part of the Convention. We must devote much more attention to the railways than has been done in the Convention at present in force.

As regards the third recommendation, which I warmly supported, I should like to point out one inadvertent inaccuracy which has crept into the published text.

The text reads as follows:

"A co-ordinating body of an international character should be formed with the duty of co-ordinating the work of the several sanitary authorities, etc."

Upon the motion of M. Barrère and myself, this text was amended as follows:

"The Committee adopts the following recommendations:

"(1)

"(2)

"(3) That a co-ordinating body of an international character should be entrusted with the duty of co-ordinating the work of the several sanitary authorities executing the measures, etc."

The amendment thus introduced is not unimportant. It corrects the impression given by the original text that the "formation" of a new international body was contemplated, which would have been absurd.

The second wording, on the other hand, without claiming to make any suggestions to the Peace Conference, implies that it is hardly necessary to "form" a new organisation for this work. It suggests the idea which I expressed more definitely in the special note attached hereto. In my humble opinion, one of the already existing organisations might be used as a co-ordinating body of international character—the Health Committee of the League of Nations, for instance, in collaboration (or, if you prefer, in consultation) with the Committee of the Office international d'Hygiène publique.

This solution would be calculated to give satisfaction to all, and would ensure firm and competent action with a view to centralising and co-ordinating prophylactic activities in a territory which is so vast and contains such a large number of States.

The following local international organisations should be invited to collaborate in this co-ordinating action:

- (a) The Egyptian Quarantine Board for persons coming from Africa.
- (b) The Constantinople Inter-Allied Committee (either in its present form or with suitable modifications) for persons coming from Asia and Europe.
- (c) A Hedjaz Committee consisting of delegates of the two organisations of Egypt and Constantinople, in order to regulate questions of health (if possible) on the spot, in the Holy Places, in collaboration with the local authorities of the new regime.

Believe me, etc.

(Signed) A. LUTRARIO.

Dr. Ludwik Rajchman,
Medical Director of the Health Section
of the League of Nations, Geneva.

APPENDIX TO ANNEX 13.

PILGRIMAGE.

I have studied this problem, which is now, as always, of vital importance, not only for the Mediterranean countries but for the whole of Europe.

This problem has assumed greater importance in view of :

- (a) The density and extent of the traffic, increased by 250 million Musulmans;
- (b) The extent of the territory from which the pilgrims are drawn and which embraces about one quarter of the old continent, where the most dangerous countries and regions are situated, permanent centres of the worst infections (Gulgia, Chinese Kassar, Mongolia, Tartary, India);
- (c) The diversity of the pilgrims, who are drawn from widely differing social classes, and are generally careless as regards matters of health;
- (d) The state of sanitary neglect of the Holy Places. Drinking water has been provided, and this is a great improvement; but the drainage conditions still remain most primitive (temporary sewers by the side of the roads); a dearth of prophylactic installations and isolation hospitals;
- (e) The many different directions taken by the currents of migration in order to reach their destination;
- (f) The different seasons of the year during which the pilgrimage takes place (the Musulman lunar year, in which the two ritual months Dulkamia and Dalheggia begin eleven days earlier every year);
- (g) Religious fanaticism which has led several States to grant freedom of pilgrimage without any restrictions as regards the state of health and economic circumstances of the pilgrims (suggested but not imposed by the Convention in force).

These points make clear all the various factors which affect this great social problem.

There are, however, further reasons for its importance from the prophylactic point of view :

I. The tendency to abandon the old routes and to utilise more rapid means of communication.

In the first place, the completion of the Trans-Siberian route, which has brought a strong current of pilgrims from China (Gulgia and Tartary, regions inhabited by 30 million fanatical Musulmans). These pilgrims proceed to Yarkich in Russia and thence to Samara, reaching the Black Sea in a few days. (In the territories traversed cholera is endemic and widespread.)

Since the completion of the Kakand-Tashkend-Oremburg railway, the pilgrims from Northern India, Afghanistan and Bokhara prefer to take these railways, which bring them to the Black Sea in a few days. Having reached the Black Sea, the pilgrims have two routes by which to proceed to the Hedjaz—by land or by sea.

The former, that is to say, the line of railway Constantinople-Konia-Adana-Alen-Damascus, will always be chosen by preference to the sea routes as soon as it is in full working order.

Other pilgrims, again, from the Balkans, go by sea to Beirut and reach the Holy Places via Damascus, Tebuk and Medina.

This mode of travel, which is becoming more and more general, very greatly shortens the journey and is gradually reducing the length of time spent on the journey, which in itself constituted a certain prophylactic protection, both on the outward and on the return journey.

2. The political changes which have taken place in the territories from which the pilgrims are drawn and the neighbouring regions.

The Constantinople Superior Board of Health was abolished on October 14th, 1914 by an Imperial Decree and was superseded by a Musulman frontier board. After the Armistice, the Musulman board was superseded by an Inter-Allied Military Board of Health, and quite recently, as the result of the very serious health conditions of the countries bordering on the Black Sea, the prophylactic service for the defence of Western Europe was entrusted to an "Inter-Allied Sanitary Commission" (March 1922).

On the other hand, the Treaty of Sevres set up the Commission of the Straits, which exercises authority over the Dardanelles and the Bosphorus, and, in addition, the Pilgrimages Quarantine Commission, which is placed under the authority of the League of Nations and on which those Allied Powers were to be represented which are concerned with the sanitary control of pilgrimages.

Under the Treaty of Sevres, I do not know what special part will be played by the Egyptian Quarantine Board as regards pilgrimages. I am also unable to state whether the Hedjaz Administration, which was set up by the Ottoman Government, will be retained. Perhaps it came to an end when the independent Kingdom of the Hedjaz was proclaimed.

The foregoing facts will show that, having regard to the great variety of these national or international organisations, both old and new, the powers of which do not appear to be clearly defined, it will be a matter of extreme difficulty at the present time to bring about that unity of sanitary control which is indispensable in the case of traffic on so vast a scale—a unity which appears to me to be of supreme importance in the interests of public health.

3. Other difficulties again are traceable to the damage inflicted on sanitary stations by the war.

Several of these stations are no longer in a position to carry on their work. An attempt has been made to re-establish the posts at Cavak and Cianak at the expense of the Allies, but this is not enough. The great majority of the other stations are destroyed.

In addition to all these difficulties, mention must be made of the inadequacy of the existing regulations. These apply principally to sea routes, although it would appear that the land route (*i.e.* by rail) is beginning to supersede the sea route, especially as regards pilgrims coming from the more dangerous areas.

The Ottoman Administration endeavoured to remedy this state of affairs and issued special regulations to prevent the introduction of infectious diseases into the Hedjaz with the arrival of the pilgrims and to guard against the infection being spread on their return.

With this object in view, sanitary stations were fully equipped at Sinope, Surmenno, Cavak and Theodosia (in Russia) for pilgrims arriving at ports on the Black Sea; at Clazomene, Beirut and Jaffa for pilgrims coming from the Mediterranean area, and at Tubuk for the Medina-Tubuk-Damascus-Beirut railway.

Thus it will be seen that since the war the dangers have considerably increased, while the means for ensuring protection against epidemics have been reduced.

In considering the measures that ought to be taken to meet the situation, attention should be given to the question of the *organisations required* and their *duties*.

With reference to the organisations themselves, regard must be had to the huge volume of the traffic drawn from an area covering a great portion of the Old World—a traffic which, for historical, racial and also political reasons, cannot be checked. The persons taking part in this movement belong to nations with widely differing national characteristics, but all are united by the same sentiments of religious fanaticism.

Unity of control is essential if the measures required are to be effective, *i.e.* the action *must be uniform, guided by the same principles, carried out by the same means, must not allow itself to be diverted from its object, must be continuous and free from weakness.*

On this condition alone would it be possible to prevent the results of the prophylactic work from being imperilled.

I am of opinion that it will be very difficult to achieve this unity by employing any of the existing organisations or any of those which existed in the past, such as

1. The Inter-Allied Sanitary Commission of Control,
2. The Straits Commission,
3. The Pilgrimages Quarantine Commission,
4. The Hedjaz Administration,
5. The Egyptian Quarantine Board.

It does not appear to me that the functions and powers of these organisations (or of some of them at least) are of such a nature as to ensure that the results already achieved should not be jeopardised by independent action on the part of these bodies unsupported by the action of other organisations.

I am also of opinion that not one of these organisations, acting alone, would possess the requisite authority and power to control the whole of the traffic.

Again, I do not believe that the power of controlling the whole traffic can be entrusted to a single State. Such a State would only exercise authority on its own territory, whereas the entire plan ought to be conceived as an organic whole and be carried out in all the countries through which the pilgrim traffic passes.

This "united front" can only be achieved by means of an organisation of great authority, thoroughly qualified, invested with considerable powers and provided with ample resources.

It may be asked whether the Treaty of Sèvres makes mention of any such organisation.

In my opinion, the competent body which ought to be vested with full authority to discharge these duties is the Health Committee of the League of Nations, acting on the advice of the Office international at Paris.

In order that this sanitary control should be reality and not a mere name, executive organisations would have to be set up on the spot which, as regards pilgrimages, would act on behalf of the central body.

What should be the nature of these organisations ?

Where should they be placed ?

What powers should they possess ?

These subordinate organisations should number three and should be established at Constantinople, Alexandria and in the Hedjaz respectively — the three strategical points, as it were.

The Pilgrimages Quarantine Co-ordination Commission referred to in the Treaty of Sèvres might act as the Constantinople organisation or sub-committee.

This sub-committee would be called upon to deal with the whole of the traffic using the Black Sea route or the railways in Asia Minor, and it would be authorised to supervise the working of all quarantine stations throughout this region.

The Egyptian Quarantine Board might serve as the Alexandria organisation. Its powers would extend to all traffic passing along the African shore of the Red Sea, and it would also supervise the sanitary stations in this area.

As regards the Hedjaz, it would not perhaps be necessary to set up a special sub-committee. The duties might be adequately performed by a delegation of the Constantinople and Alexandria committees, which would proceed to the Hedjaz in the pilgrimage season and co-operate with the local government.

I shall not discuss the details of the service.

Regard should, however, be had in the Convention more particularly to the following points:

1. The new direction taken by traffic, which tends to follow the land route rather than the sea route;

2. The desirability of making every possible effort from the point of view of public health, at the places from which the pilgrims come, and during the journey or the voyage, as the case may be, to ensure the maintenance of satisfactory sanitary conditions among these moving masses of humanity, and to enable pilgrims to reach their destination without occasioning outbreaks of epidemics on the way.

In this manner it would be possible to safeguard the Hedjaz and to enable pilgrims to visit and reside in the Holy Places and to return to their homes without any risk of epidemics breaking out.

In a memorandum which I intend to submit to the President, I have set out my observations and suggestions in greater detail. These observations and suggestions I lay before the Committee for its consideration.

Annex 14.

REPORT ON THE RECENT WORK AND PRESENT POSITION OF THE EPIDEMIC COMMISSION BY SIR GEORGE BUCHANAN.

GENEVA, January 11th, 1923.

1. The general work of the Commission has been very fully described at successive sessions by the Medical Director and by the Chief Epidemic Commissioner, Dr. Norman White. At the last session in August, Dr. White gave an account of the present position of the special funds of the Commission and of the expenditure on its work which had been incurred to date. At the present session the Medical Director has given in his report a statement of the further work of the Commission since August last, together with a summary of the main items of expenditure from the Epidemic Commission Fund. The latter has also been the subject of an audited account appended to the Director's report.

2. It will be convenient to limit the present note to a brief review of the present position of the Epidemic Commission; in particular, of what members it consists, what are its resources and what duties lie before it.

3. Present constitution of the Commission. — The Commission, whose work is under the general direction of the Medical Director and the Health Organisation, consists of:

Dr. Norman White, the Chief Epidemic Commissioner. (now seconded for the Far East Enquiry);

Dr. Gauthier, who has been acting as Commissioner since 1921 (now in Greece);

Dr. Haigh, who has been acting as Commissioner since January 1922. (now in Greece);

Dr. Pantaleoni, who has been acting as Commissioner since September 1922 (now in Moscow);

together with a Business Manager (with headquarters in Warsaw) and a clerical staff.

4. Resources of the Commission. — These have hitherto been supplied entirely from the special funds and material obtained by the League from the different Governments which have undertaken to contribute to its work, together with what has been supplied by the League of Red Cross Societies. Following the recommendations of the Health Committee at its last session, however, a sum of 50,000 (fifty thousand) gold francs has been made available from the general budget of the League towards that section of the work of the Commission which consists of obtaining information regarding epidemics for the purposes of the Health Organisation, in making the necessary epidemiological enquiries, and taking measures to co-ordinate the work of public health authorities in different countries with a view to combating risks of the spread of epidemic diseases to which such countries are liable as a result of their intercommunications.

5. The special fund here in question appears now to be practically exhausted. Of the sum still unexpended, some £12,000 is required for work to which the Commission is already committed, and approximately £5,000 is at present available for purchase of other material and general purposes. The probability that any considerable amount of additional money or material will be added to the fund, as a result of the more recent enquiries made by the League, is extremely small. It is well, therefore, as a matter of practical business, to face the situation which has arisen. Additional work requiring more money, however desirable, cannot be proceeded with, while the fact that this special fund will so soon be exhausted makes it prudent that as soon as the circumstances permit, a date should be fixed for closing the fund and presenting a final summary of expenditure. This should be accompanied by a resumé of the work accomplished by the Commissioners and a list of reports and accounts already presented. It is understood that this could conveniently be done on Dr. Norman White's return, after some final arrangements have been made in Poland. This final document should be communicated to the Governments concerned for their information. Those Governments which have contributed may be assured that the whole expenditure has been wisely and economically directed, and that the benefit secured for the Public Health of Europe by their means, has been really great.

6. The enforced conclusion of the work of the Commission under this fund calls for a few observations. It marks the termination of some three years' effort which has mainly been devoted to strengthening the sanitary defences of States on the western borders of Russia, together with

certain auxiliary arrangements in Russia itself. All this work has had as a primary object the prevention of the westward spread of the principal epidemics which have been prevalent in Russia, and, more particularly, it has been directed to improving the control which could be exercised over the importation of infection by the masses of population leaving Russia and being repatriated from Russia to Poland, Latvia, Lithuania and other States.

(7) In the reviews which at different times the Health Committee has made of the position in Eastern Europe, great stress has been laid, and rightly laid, on the important part likely to be played by the introduction of infection *en masse* by means of these great movements of population. The Epidemic Commission has never been in a position to undertake out of its own funds and material more than a subsidiary part of the organisation established in the border States to deal with this situation; but this auxiliary action has been of the greatest value, not merely by the material assistance which it represents but perhaps still more by the support which it has given to the defensive organisation in the different countries concerned. For this result much credit is due to the manner in which the several Commissioners have appreciated and utilised their opportunities, sometimes in circumstances of very considerable delicacy and difficulty, as well as to the cordial welcome and assistance which they have received from the public health services with which they were in contact. These observations apply not only to the border States but in a very large and important manner to the work which has been done within Russia itself in concert with the Soviet public health authorities.

(8) It will naturally be asked whether the conclusion of these activities, so far as they are carried out by the aid of the special fund, is likely to affect the protection of Europe from invasion by the epidemics so severely prevalent in Russia. It must be admitted that the future in this matter is very uncertain. The Committee can only conclude, from recent information, that in Soviet Russia and the Ukraine the prevalence of typhus and relapsing fever continues this winter to be almost as serious as it was a year ago; that a recrudescence of cholera may be expected in various centres, while the position as regards other diseases (notably smallpox, enteric fever and dysentery), to which must now be added malaria remains of great gravity according to the standards of other countries, and also by comparison with European Russia before the war. In regard to extension to other countries, there is at the moment less cause for apprehension on account of the recent diminution in the westward movement of population from Russia in the process of repatriation. As explained in many previous reports, the most serious risk, in this respect, has been the importation of infection on a great scale by means of arrival of masses of repatriated persons in the border States. For political and other reasons, however, this movement has lately almost ceased. It is understood, indeed, that the Russian department concerned with repatriation has now been closed down. While this consideration is of great importance, the possibility of new changes affecting the movements of the population, and the possible result of freer communications of the more ordinary kind between Russia and other countries, must not be forgotten. It would be wrong, in any discussion of this question, to fail to take account of the great influence which must have been exercised by the various great works of relief and medical assistance in these regions which have been undertaken by voluntary agencies; by the American Relief Association on an enormous scale; by the devotion of humanitarians in so many other countries.

(9) So long, therefore, as this state of things continues, it is possible to hope that there is less necessity than formerly for the type of work on which the Epidemic Commission was primarily engaged, the more so as the public health and epidemic services of several border States concerned have in every way become more effective and more stabilised. In any case, as a practical matter it cannot be pursued.

(10) By this statement, however, it is not implied that all work which has been undertaken hitherto by the Epidemic Commission must cease. On the contrary, important duties, the undertaking of which has been approved by the Council and by the Assembly on the advice of the Health Committee, remain to be carried out, and can be carried out by means of funds available from the League's own budget. These duties, in general terms, consist of obtaining epidemiological facts in particular areas which are affected, in undertaking or organising special observations or enquiries in relation to the spread of particular epidemic diseases, and in advising on the means by which facts as to epidemic prevalence could most effectively and accurately be obtained, for the benefit of all nations in the progress of epidemics. Work of this kind has to a considerable extent been carried out since the last session of the Health Committee in Russia successively by Dr. Haigh and Dr. Pantaleoni with very satisfactory results. From experience recently gained, therefore, it may be concluded that the continuance of Epidemic Commissioners in some form or other as part of the Health Organisation is of the greatest practical value to the health work of the League so long as serious epidemics recur in countries which demand or which welcome the assistance which the Commissioners can give them.

II. There is another purpose for which the services of the Epidemic Commissioners may from time to time be used with the greatest possible advantage. Their experience, which is in many respects exceptional, may on occasion be placed at the disposal of all Governments or public health organisations requiring their counsel or assistance in emergency. An example of the latter position has arisen since the recent catastrophe to Greece and the consequent flight of large numbers of Greek refugees from Anatolia and the exchange of populations taking place in Thrace. In connection with the special arrangements inaugurated by Dr. Nansen, a request was made for the services of members of the Epidemic Commission to act as advisers on the numerous and serious health questions which were daily arising. In consequence of this, the services of both Dr. Gauthier and Dr. Haigh were lent to Dr. Nansen, while at the same time the Health Organisation secured

the advantage of obtaining, through these Commissioners, information as to the principal sanitary conditions and epidemic risks likely to arise in connection with this refugee movement. Recently a sum of £5,000 has been handed over by Dr. Nansen to the Commissioners to be employed in the purchase of certain essential materials in connection with the prevention of epidemic disease. According to the present arrangement, the Commissioners have ceased to be advisers to the Nansen Organisation and are working in Greece by the direct request of the Greek Ministry of Public Assistance in concert with the Greek authorities. The funds at their disposal will be employed for certain special purposes, such as a vaccination campaign, while their experience of handling epidemics in emergencies will be utilised in the organisation of public health measures in the various refugee centres.

12. It seems evident that arrangements of this kind afford a prospect of extreme utility to countries in exceptional distress from circumstances of this nature and that such arrangements fall entirely within the purposes of an international health organisation, provided always that the authorities of the countries affected are themselves willing and anxious to obtain the expert assistance which the Health Organisation is in a position to lend.

13. It may be suggested that the Committee should at its present session take note of the position as above stated, while leaving to a subsequent session the question of specific resolutions regarding the future of this section of its work.

Annex 15.

WATERWAYS SUB-COMMITTEE.

A. SPEECH BY M. CHODZKO, CHAIRMAN.

January 5th, 1923.

After having read this short note giving a brief account of the Waterways Sub-Committee of the Health Committee, and its activities up to the present time, and the reports which have been received on the system of health regulations for waterway traffic in force in various countries, I think it desirable to point out that before a model programme of health regulations for international waterway traffic can be drawn up, we must reach an agreement on a certain number of general prophylactic principles.

When these principles have been decided upon, we must then make a statement of them and give our reasons for adopting them, and, if necessary, defend them before the Mixed Sub-Committee, where we shall meet the members delegated by the Transit Committee of the League of Nations.

I therefore propose:

1. To determine in the first place the infectious diseases in regard to which health surveillance must be exercised, and in the case of which, when an outbreak occurs:

(a) Notification must be mutually given by the various health services of the riparian States;

(b) Adequate hygienic measures must be applied.

2. To decide at once what is to be the nature of the health surveillance and what health measures are to be taken as regards the crew and passengers of vessels used for transport, both in ordinary times and in times of epidemic.

I would suggest, for example:

(a) The medical examination of persons, isolation of patients, observation of persons suspected of infection, surveillance of persons who have been exposed to contagion, disinfection and delousing of persons on board, vaccination, etc.;

(b) Local examination of vessels used for transport, their disinfection, delousing, and the extermination of rats on board, disinfection and delousing of goods, etc.;

(c) Provision of drinking water;

(d) Evacuation and disinfection of fæces;

(e) Administrative measures enabling surveillance to be easily and simply carried out.

3. To specify and agree upon a nomenclature for the various agencies of health control which will include:

Doctors, assistants and health stations;

Epidemiological stations with laboratories, disinfecting, delousing and rat-exterminating stations;

Material, such as motor-boats, telephones, etc.,

Isolation hospitals.

It is important here to draw the attention of the members of the Mixed Sub-Committee to the necessity of these different agencies being in existence at all times. In order to meet the objection which will certainly be raised to the enormous expenditure thus entailed in order to yield only occasional results, the Governments must be advised to employ these various agencies for other purposes, so that they should be ready to act when the need arises. For example, in countries in which there already exist bacteriological laboratories, disinfecting stations and isolation hospitals, it would be advisable to make use of these when epidemics occur on navigable waterways, in co-operation with the services of the doctors in charge of the health surveillance of waterways. In countries in which these organisations do not exist in sufficient numbers, they should be established as soon as possible, not merely for the supervision of health measures on rivers but also for the permanent needs of the country. In this way these agencies would always possess a trained staff and material in working order, and in case of epidemics they would always be ready to fulfil the task allotted to them.

4. There remains the question of penalties.

I think that this subject, which is not connected with health, should be left for examination by the members appointed by the Transit Committee who are competent to deal with this matter. I would venture, however, to make one small suggestion, the result of my own somewhat limited experience: in the event of a dispute between the health services of riparian States, would it not be advisable to propose the mediation of the Mixed Sub-Committee for International Waterways? I would point as an example to the mediation of the Health Committee, which was accepted by Latvia, Czechoslovakia and Roumania in the event of any disputes which might arise between them and Poland on the subject of health.

B. GENERAL NOTE.

Geneva, January 5th, 1923.

In view of the fact that the resolutions adopted by the European Health Conference held at Warsaw from March 20th-28th, 1922, were approved by the International Conference at Genoa, the Health Committee, to which the Council of the League of Nations has entrusted the execution of the programme drawn up by the Warsaw Conference, examined, at its recent session held in August 1922, the third section of the first of these resolutions, which reads as follows:

"3. Comprehensive measures should be introduced to deal with infectious diseases, specially the diseases now raging in the East. These measures should, in addition to general provisions, contain special provisions dealing with:

- "(a) Frontier traffic (including local frontier traffic);
- "(b) Traffic by water."

Paragraph (b) of this section was specially considered by the Health Committee, in view of the importance of the problem and the fact that Article 52 of the revised Paris International Health Convention of 1912 entrusts to the Governments of riparian States the duty of making special arrangements for the sanitary regulation of waterways.

It was therefore the task of the Health Committee of the League of Nations, in virtue of the decision of the Council already quoted, and with a view to facilitating the work of the Governments of the riparian States of international waterways, to investigate the possibility of drawing up the outline of a general agreement on this matter.

For this purpose the Health Committee, at its session held in August 1922, considered it desirable that a Mixed Sub-Committee should be set up, to be composed of representatives of the Transit Committee and the Health Committee. The Transit Committee agreed, and the Mixed Sub-Committee was composed of MM. Chodzko, Lutrario, and Carrière, appointed by the Health Committee, and MM. Baldwin, Popesco and Stievenard, appointed by the Transit Committee.

In order to consider the sanitary aspect of the questions to be submitted to the Mixed Sub-Committee, a preliminary meeting of the members appointed by the Health Committee was held on August 22nd, 1922, in the presence of a representative of the Secretariat of the Transit Committee. According to the minutes of this meeting, it was decided:

1. To consider the general outline of a system of sanitary regulations which could be applied to all international waterways;
2. To enquire into the following points:
 - (a) Ports,
 - (b) Vessels and their crews,
 - (c) Bills of health,
 - (d) Examination of vessels,
 - (e) Organisations for sanitary control;
3. (a) To request certain experts to draw up a general report on the sanitary regulation of waterways and ports in force in various countries;
- (b) To draw up a draft model system of regulations, after consideration of the reports received.

In order to obtain general reports on the sanitary regulation of waterways and ports, the Health Section of the Secretariat of the League of Nations approached the following:

The Reichsgesundheitsamt of Germany,
 The Volksgesundheitsamt of Austria,
 The Public Health Service of Denmark,
 The Chief Health Committee of Holland,
 The Office of the Italian Director-General of Public Health,
 The Hygienic Section of the Serbian Ministry of Public Health,
 The Public Health Service of the United States.

Dr. Rho, chief of the Sanitary Section of the International Danube Commission, had already sent a draft scheme of regulations.

The Health Section has received documents from the Reichsgesundheitsamt, the Volksgesundheitsamt, the Italian Director-General of Public Health, and the Serbian Ministry of Public Health.

A. The draft regulations for the sanitary protection of Danube traffic, sent by Dr. Rho, consist of the following sections:

1. General provisions relating to the health surveillance of the passengers and crews of vessels used in transport and to the measures to be applied, when necessary, to persons suffering from, or suspected of suffering from, diseases.
2. Special provisions relating to

(a) Cholera, (b) plague, (c) exanthematic typhus.

3. Model forms, leaflets, etc.

B. The report of Dr. Breger, of the German Reichsgesundheitsamt, gives a description of the customs and practises of watermen, together with certain epidemiological considerations on cholera. On this basis he suggests a plan of campaign which was approved and carried out in Germany in 1892-1893 on the advice of Robert Koch. He demonstrates the simplicity and effectiveness of this plan.

C. Dr. Helly, Director of the Volksgesundheitsamt of the Austrian Federal Ministry of Social Economy, states that he regards it as indispensable that the traffic on international waterways should be subject to uniform regulations. The draft system of regulations drawn up by Dr. Rho was, he says, exceedingly opportune, though he would like to make a few alterations in the manner in which the problem is set forth.

He draws attention to the existence in Austria of a system of sanitary regulations for river traffic which has been in force since 1893 (Decree of September 30th, 1893, R. G. B. L. No. 148, and the orders issued under this decree: No. Z. 1/23/406 of September 30th, 1893; No. Z. 1/17/059 of November 18th, 1893, and No. Z. 1/80/371 of November 20th, 1893).

D. Dr. Lutrario, Director-General of Public Health in Italy, in the general report which he sends, begins by drawing attention to the considerable part played by waterways in the dissemination of certain infectious diseases and to the absence of any international regulations dealing with the sanitary aspect of this serious question.

He then points out that special sanitary regulations for water-borne traffic have been drawn up in Italy. These regulations conform to the general principles laid down by the International Sanitary Convention and are based on certain guiding principles:

(a) Inspection of the hygienic and sanitary conditions of vessels and persons carried thereon before departure, and issue of special health papers for the voyage;

(b) Inspection, at intervals of not less than 12 hours nor more than 24 hours, of the hygienic and sanitary conditions at ports of call, compulsory and otherwise, and at the place of destination. Execution, when required, of such sanitary measures as may be considered necessary owing to circumstances;

(c) Organisation of stations for the isolation of persons suffering from, or suspected of suffering from, infectious diseases, and for the medical observation of patients.

E. Dr. STAMPAR, Director of the Hygienic Service of the Serbian Ministry of Public Health, points out that in his country the system of sanitary regulations in force for traffic by water is the same as in Austria.

He then gives in his report the names of the bacteriological and epidemiological stations and isolation hospitals at present in existence in Serbia. He states that the Government has two medical trains and a medical ship with laboratory and disinfection station, and that each district health section has a mobile disinfection column provided with epidemiological specialists.

Conclusions.

The various rapporteurs all draw attention to the active part played by waterways in the dissemination of certain infectious diseases such as cholera, exanthematic typhus, plague, etc. They lay stress on the necessity of drawing up a model scheme of sanitary regulations for traffic on international waterways with a view to the effective prevention of the propagation of epidemics.

Some of them regard it as indispensable that attention should be paid, in the preparation of such a scheme, to certain principles such as the following: reciprocal notification of cases of certain specified infectious diseases, supervision and execution of measures in such a way as to avoid hindrances to traffic.

C. PROPOSAL BY Dr. STIEVENARD

(Member of the Advisory and Technical Committee for Communications and Transit.)

Geneva, January 10th, 1923.

The Mixed Sub-Committee for Transit and Health,

Considering that a general prophylactic system can only result from common and concerted action on the part of all nations;

That, in order to be really effective, and to check the ravages caused by epidemic diseases, the prophylactic system adopted must be such as to co-ordinate all efforts.

That each country owes it to itself and to the whole world to combat by every means in its power any contagious disease which is discovered to exist within its territories;

Considering that, if each nation carries on this campaign with all the energy of which it is capable, if it employs all the forces which the constant progress of technical science places at its disposal, and if it utilises the resources offered to it by the international health organisations, the necessity for health defence on the frontiers will be proportionately reduced;

Admitting nevertheless that, on account of the varying conditions of international traffic and the existence of regions in which prophylactic protection may be difficult, if not impossible, it is still necessary to make provision for situations justifying measures of health protection on the frontiers;

Considering that it is therefore desirable to determine the means of restricting within the lowest possible limit the obstacles to communications caused by the protective measures;

That it is also desirable to consider the possibility that the application by any country of measures of this kind on its frontiers might prejudice the interests of international commerce and reduce the facility of communications;

Is of opinion that the Health Committee and the Communications and Transit Committee of the League of Nations should act in close and permanent co-operation in dealing with the above problems as a whole, since they concern both these bodies;

And that the Mixed Committee, composed as it is of members of both these Committees might form a permanent organ of mediation, as it is specially adapted to find a practical solution for any difficulties arising between States in connection with the application of measures of health defence which may affect international communications and traffic.

D. NOTE FROM THE WATERWAYS SUB-COMMITTEE

(submitted by Dr. Lutrario to the Mixed Sub-Committee for Transit and Health.)

Geneva, January 11th, 1923.

The Waterways Sub-Committee of the Health Committee, at its meetings held on January 5th and 6th last, unanimously decided that in certain circumstances waterways might prove to be very active agents for the spread of certain infectious diseases, and that this fact was of special interest as regards health protection, particularly in the case of those waterways which are great international arteries. It therefore considers it necessary to lay down the principles which should form the basis for the preparation of a model programme for the regulation, from a health point of view, of traffic on international waterways. It considers that the same system of regulation might also be employed on national waterways.

After an exhaustive consideration of the question, the following resolutions were unanimously adopted:

I. The Waterways Sub-Committee of the Health Committee considers that it is, in principle incumbent upon the riparian States of an international waterway to supply each other regularly and unreservedly with any information which they may possess on questions connected with infectious diseases of any kind.

This obligatory declaration must include :

(a) Notification of first appearance of cholera, plague, and yellow fever (in accordance with the conditions of the Paris International Health Convention of 1912) and of cases of plague amongst rats;

(b) Any development in epidemic form of exanthematic typhus, relapsing fever, smallpox and dysentery which has been duly notified;

(c) The appearance of any infectious disease of any kind whatever if it assumes an epidemic character in districts in which the disease does not generally appear, or in which it does not usually take an epidemic form.

2. The Waterways Sub-Committee strongly upholds the principle laid down by the Paris International Health Conference of 1912 to the effect that in the campaign against infectious diseases, interference with traffic and commercial relations within the country itself and with neighbouring countries should, as far as possible, be avoided.

It considers, however, that in the case of cholera, plague, yellow fever, exanthematic typhus, relapsing fever and bacillary dysentery, the application of proper health measures should be compulsory.

That in case of smallpox it will suffice to advise the Governments to apply these measures.

3. The Sub-Committee considers the following conditions to be essential:

(a) That the health control service for waterway traffic, both international and national, should be carried out by the State public health service.

(ii) That this control service should be composed of the following:

(a) Doctors and assistants.

(b) Health stations, epidemiological stations, laboratories and disinfecting, delousing and rat-exterminating stations; material such as medical aid boats, motor-boats, telephones, etc.

(c) Isolation hospitals.

The organisations and installations which already exist in the various countries should be drawn upon as far as possible both for staff and for prophylactic installations. We do not think that fresh official health services should be created, but that the organisations which already exist should be utilised by adapting them to cope with the new duties.

The installations should be organised on very simple lines and should consist, as far as possible, of the materials available on the spot.

The Sub-Committee recognised, however, that though the methods of organisation may vary in different countries, it is absolutely necessary that this health control service should be so organised as to be able to take action in any circumstances which may arise.

4. With a view to the smooth working of the service, the Waterways Sub-Committee recommends that a liaison organisation should be created between the health control services of the riparian States of an international waterway, and that this body should be composed of the heads of the various health services in question.

5. The Waterways Sub-Committee is of opinion that the health control service for the traffic on international, as well as on national, waterways should be organised in normal times and should be brought into service whenever there is the least call for its employment in co-ordination with existing health services intended for other purposes.

6. As regards the question of the relations between the health control service for the traffic on international waterways with each other and with the international river commissions and with the Health Committee of the League of Nations, the Waterways Sub-Committee of the Health Committee would observe that on this point it would be preferable that these questions and also questions of penalties should be considered in concert with the members appointed by the Transit Committee. Nevertheless, it ventures to suggest that a proposal should be made to the various Governments to insert in the conventions an article providing for mediation by the Mixed Sub-Committee for International Waterways in the event of any disputes which might arise between the various health services of the riparian States.

[Distributed to the Council
and the Members of the League.]

LEAGUE OF NATIONS

HEALTH COMMITTEE

MINUTES OF THE SIXTH SESSION

held at Paris from May 26th to June 6th, 1923.

LIST OF MEMBERS OF THE COMMITTEE

The following members of the Committee participated in the deliberations of the sixth session :

Professor Th. MADSEN, <i>Chairman.</i>	Director of the State Serum Institute, Copenhagen.
Sir George BUCHANAN, C.B., M.D., <i>Vice-Chairman.</i>	Senior Medical Officer of the Ministry of Health, London.
Professor Léon BERNARD,	Professor of Hygiene at the Faculty of Medicine of the University of Paris.
Dr. F. CAROZZI,	Head of the Industrial Health Section of the International Labour Office.
Dr. H. CARRIÈRE,	Director of the Federal Health Department, Berne.
Dr. Carlos CHAGAS,	Director-General of the Oswald Cruz Institute, Rio de Janeiro.
Dr. CHODZKO.	
Surgeon-General H. S. CUMMING,	Director-General of the United States Public Health Service, Washington.
Dr. S. UCHINO, (replaced by M. KUSAMA).	Senior Medical Officer in the Home Department.
Dr. LUTRARIO,	Director-General of the Health Department at the Ministry of the Interior, Rome.
Dr. Angel PULIDO,	Director-General of the Public Health Department, Madrid.
Professor SANTOLÍQUIDO,	Adviser on Matters of International Health to the League of Red Cross Societies.
Dr. RAJCHMAN,	The Medical Director, acted as Secretary of the Committee.

Absent :

Dr. Josephine BAKER,
Professor CALMETTE,
Sir Havelock CHARLES, G.C.V.O.,
Professor NOCHT,
M. O. VELGHE.

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FIRST MEETING

held at Paris on May 26th, 1923, at 10.30 a.m.

1. Opening of the Session.

The CHAIRMAN, in opening the meeting, expressed his regret at the absence of M. Velghe, Dr. Josephine Baker, Sir Havelock Charles, M. Nocht, Professor Calmette, and Dr. Uchino, who was to have taken the place of Professor Miyajima but who would be replaced during this session by M. Kusama. He read letters of regret from them and expressed the Committee's good wishes to M. Velghe and Dr. Baker, who were unable to be present owing to ill-health.

M. Nocht was unable to assist, as he was detained in Italy for a collective exchange of specialists between the various medical staffs occupied in the campaign against malaria. Sir Havelock Charles was prevented from attending by reason of urgent private affairs.

The Chairman also welcomed Professor Chagas, Dr. Cumming and M. Hudelo, representing M. Strauss, the French Minister of Health, who had always shown great courtesy to the Committee and to whom he expressed his heartiest thanks.

2. Agenda of the Session.

The CHAIRMAN suggested that the Committee should not adhere strictly to the order of the proposed agenda but should deal first with the question of the Mixed Commission which was to consist of delegates of the Office international d'hygiène publique and the Health Committee, as that Commission was to meet on the following day. Moreover, several members of the Committee had expressed their desire to take part in the Pasteur Centenary celebrations at Strasburg, to which some of them were being sent officially by their Governments. It would therefore be necessary for them to return to Paris to conclude the work of the session. The Committee should, however, endeavour to finish that part of the agenda which concerned the Mixed Commission before its members left for Strasburg.

The proposal was adopted.

Sir George BUCHANAN asked whether it would be possible to add to the agenda two short questions, one regarding the work on malaria and the other regarding cancer statistics. These two questions had been dealt with in memoranda which he had already communicated to the Chairman for distribution to the members of the Committee.

The proposal was adopted.

The draft agenda, with the addition of the two items proposed by Sir George Buchanan, was adopted (Annex 1).

3. Proposed Appointment of Sub-Committees.

Dr. RAJCHMAN suggested that, as the session would be interrupted, Sub-Committees should forthwith be appointed to investigate some of the most important questions, including the questions of malaria and cancer mentioned by Sir George Buchanan. The Committee also had before it important problems: the problem of the epidemiological intelligence service and the problem of exchanges of health personnel. These questions might immediately be referred to two Sub-Committees.

Sir George BUCHANAN was afraid that the Sub-Committees would not be able to meet before the Strasburg celebrations.

Dr. RAJCHMAN suggested that each Sub-Committee should appoint a Rapporteur, who would submit his report on their return from Strasburg. A certain amount of time would thus be saved.

Professor Léon BERNARD supported this proposal. He added that it would be desirable to co-opt to the Sub-Committees technical experts who were not members of the Committee, as had been done for the question of sleeping sickness and tuberculosis. Thus, in connection with cancer, it would be useful to consult Professor Roussy, who was thoroughly acquainted with the international aspects of the question.

The CHAIRMAN agreed that Professor Roussy was one of the best experts on cancer.

Dr. RAJCHMAN said that there was no formal objection to the procedure suggested by Professor Bernard. The Committee was always free to co-opt experts.

On the proposal of the Chairman, the Committee decided to appoint the two Sub-Committees at its next meeting.

4. Medical Director's Report. Adjournment of the Discussion.

The Medical Director's report on the work of the Health Section from the end of January to the end of April 1923 (Annex 2) was then read.

The CHAIRMAN thanked the Medical Director for the highly instructive and fully documented report which he had submitted to the Committee. He proposed that the discussion should be adjourned to the next meeting.

The proposal was adopted.

5. Provisional Report on Tuberculosis and Sleeping Sickness. Speech by Dr. Balfour.

The CHAIRMAN stated that the Committee was fortunate to be able to profit by the presence in Paris of two of the members of the Sub-Committee of Experts on Tuberculosis and Sleeping Sickness: Dr. Balfour and Dr. Bagshawe. This Sub-Committee of Experts had prepared a report (Document C. H. 87) which was in the hands of members of the Committee.

The Chairman said he was sure that he expressed the feeling of the Health Committee in asking Dr. Balfour to give a summary of his work and to indicate what action, if any, it might be possible to take.

Dr. BALFOUR analysed the report submitted to the Committee. He pointed out that this document, drawn up by the Sub-Committee of Experts which had been requested to collect information as to the incidence and distribution of tuberculosis and sleeping sickness in tropical Africa, was to be regarded as provisional.

The Sub-Committee had met in London for two days in November 1922; it consisted of Dr. Balfour, Dr. van Campenhout and Dr. Martin. At the suggestion of Dr. Balfour, who was Chairman, Dr. Bagshawe (Director of the Tropical Disease Bureau in London) had been asked to attend the meetings and had consented to do so; he was appointed a member of the Committee on March 14th, 1923.

As thorough an investigation as possible in the time available had been made, and the report included, as annexes, a large map and a number of diagrams, which would assist in giving a general idea of the researches which had been carried out. The countries which had formed the subject of the investigation were situated in Equatorial Africa, and a complete list of them was attached to the report.

Considerable information had been given regarding the history of tuberculosis and sleeping sickness.

A circular letter had been sent to the Powers concerned asking for information, and very valuable replies had been received from the Belgian Government and the French and the British Colonial Offices. No information was yet forthcoming, however, from certain countries, for example, as regards sleeping sickness in the Spanish and Portuguese Colonies.

It seemed preferable to put the Committee at once in possession of the information already obtained, subject to such modification as might be necessary when other replies had been received.

It would probably be desirable to prepare a supplementary report later.

In any case the document distributed to the Committee indicated the urgent necessity for the closest possible co-operation between the Egyptian Sudan, the Belgian Congo and French Equatorial Africa, since sleeping sickness seemed to be spreading in those regions and from one region to the other. The same remarks applied, for example, to Uganda and the Congo, though the need was not quite so pressing.

In conclusion, Dr. Balfour apologised for the length of the provisional report but hoped that the information which it contained would be of use to the Committee.

The CHAIRMAN offered his heartiest thanks to Dr. Balfour, Dr. Bagshawe and the other members of the Sub-Committee of Experts for the information which they had supplied to the Health Committee. In particular, he thanked Dr. Balfour, whose authoritative statement would assist in drawing attention to the danger at present involved by the spread of sleeping sickness. Members of the Committee would be glad to receive the supplementary report which had been promised.

Sir George BUCHANAN said that there was no need for Dr. Balfour to apologise for the length of his report, for it was desirable that documents of that kind should be as detailed as possible and should give all references that might be of use. In his opinion, the Committee should prefer such a work as had been submitted to any summary, however ably compiled.

He asked whether the Sub-Committee of Experts would draw up a final report embodying its recommendations or whether the recommendations already set forth in the document before the Committee were to be considered at once.

Dr. BALFOUR replied that the report was merely a statement of the present condition of affairs and contained recommendations put forward by the local medical authorities concerned. These were not the final recommendations of the Sub-Committee, which would subsequently have to be considered by the Health Committee.

The CHAIRMAN asked Dr. Balfour whether the danger of the spread of sleeping sickness to which he had drawn attention was so imminent that urgent steps would have to be taken in the immediate future.

Dr. BALFOUR said he did not think immediate steps were necessary ; in any case the report of the Sudanese Authorities for 1922 had only just reached the Sub-Committee, which had not yet examined it. The Sudanese Government was very anxious that the increase of sleeping sickness should be arrested, and so it was possible that it was taking all the necessary measures with this object and was working in collaboration with the authorities of the neighbouring countries.

If, after examining the documents which it had received since the report had been drawn up or which it would receive later, the Sub-Committee concluded that action was urgently necessary, it would inform the Chairman and would supply him with all necessary particulars.

The CHAIRMAN thanked Dr. Balfour and Dr. Bagshawe for the valuable assistance they had given to the Committee.

6. Examination of a Memorandum concerning the Scheme for the Constitution of the Permanent Health Organisation and the Appointment of a Special Mixed Commission. Appointment of the Committee's Delegates on the Mixed Commission.

A memorandum concerning the resolution adopted by the Council on January 30th, 1923, regarding the appointment of a special Mixed Committee to consider a scheme for the constitution of the Permanent Health Organisation (Annex 3) was then read.

The CHAIRMAN said that it had originally been decided to take advantage of the meeting of the Committee of the Office international d'hygiène publique which was to be held in Paris from May 14th to 23rd, to begin at that time the work of the Mixed Committee.

This plan had fallen through owing to the absence of Dr. Rajchman, and the Mixed Committee, which had first been summoned to meet on May 14th, was now to meet on May 28th. Any scheme for the establishment of a permanent organisation which the Mixed Committee prepared could not immediately be submitted to the Committee of the Office international d'hygiène publique. The scheme could not therefore be ready in time to receive the final approval of the Assembly of the League of Nations in September next.

Under these circumstances, it would seem that the Mixed Committee should rather be regarded as a committee of enquiry which would endeavour to draw up a report to be submitted to the Committee of the Office international at its next session in October. The Committee of the Office international, at its last session, had adopted the following resolution on the question :

“ The Committee of the Office international d'hygiène publique, in view of the fact that it has no authority to make changes in its constitution and powers ;

“ And that the Rome Agreement of December 9th, 1907, and the Statutes annexed thereto can only be modified by the Governments of the States represented in the Office ;

“ And in view of the fact that the Committee has always declared itself willing within the limits of its powers to co-operate with the League of Nations, nominates MM. to study, with the representatives of the Health Committee of the League of Nations, the Health Organisation of the League of Nations ;

“ It being understood that they cannot accept any proposal which would entail any change in the constitution and functions of the Committee of the Office international d'hygiène publique. ”

The Mixed Committee would consist of the following members :

Representing the Office international d'hygiène publique : M. Barrère (Chairman of the Committee of the Office international) ; M. Raynaud, M. Jorge, M. Jitta, M. Granville, M. Stock, M. de Navailles and M. Cantacuzène, assisted by the Director and Deputy-Director of the Office (M. de Cazotte and M. Pottevin).

Representing the Health Committee of the League of Nations : Dr. Madsen (Chairman of the Health Committee), Sir George Buchanan (Vice-Chairman of the Health Committee), Dr. Lutrario, M. H. Chodzko, Prof. Léon Bernard, Dr. Carrière, Dr. Uchino and Prof. Chagas, assisted by the Medical Director, Dr. Rajchman.

It was agreed that the Mixed Committee should meet on Sunday, May 27th, at 10 a.m., instead of on the 28th.

Dr. RAJCHMAN said he wished to add a few words regarding the procedure to be followed. The Chairman had pointed out the difficulty of arriving at a final solution of the question

and of drawing up a report for the next Assembly, in view of the fact that the Committee of the Office international was not sitting.

In this connection it should be remembered that the Mixed Committee's report would have to be approved separately by each of the two Committees which had appointed the members of the Mixed Committee (the Health Committee and the Committee of the Office international d'hygiène publique) and by the Council of the League before it could be submitted to the Assembly of the League.

Sir George BUCHANAN thought that the procedure suggested by Dr. Rajchman was substantially the same as that proposed by the Chairman, given the special circumstances that had arisen. The absence of the Medical Director, together with the illness of M. Velghe, had made the presentation to the Office international d'hygiène publique of the proposal for a Mixed Committee a very delicate and difficult task. The Chairman was to be congratulated on the course which he had adopted to secure the assent and help of the Office international. This course necessarily meant that the intention of M. Viviani's resolution could not be carried out in its entirety, but if objections were made to this result on the side of the League he felt sure that they would be waived, in view of the fact that the League itself was partly responsible for the circumstances.

Moreover, the Office international d'hygiène publique could not forego the reservations which it had made in its resolution, as its members were responsible to their Governments in matters affecting the Rome Convention and were bound to ask for instructions.

Dr. RAJCHMAN said that he had merely wished to draw attention to the relations which must exist between the Mixed Committee and the two bodies by which it had been constituted. Even had it been possible for the Mixed Committee to meet earlier and for a decision to be reached in time, that decision would have had to be submitted to the Health Committee, which was to have met on May 23rd.

The object of his remarks was to make it clear that, after all, the present situation involved very little alteration in the original plan.

The CHAIRMAN observed that if the original plan could have been followed, the work on the constitution of the Permanent Health Organisation could have been concluded at the present session. If the Mixed Committee could have met on May 14th, the results of its work could have been submitted to the Committee of the Office international before the end of its session, and, as the Health Committee was to meet immediately afterwards, these results could have been laid before it also during the present session. In the original plan, it was clearly understood that both the Committee of the Office international and the Health Committee were to be consulted.

However, in view of the desirability of having this important question thoroughly discussed, the Committee might congratulate itself on not being compelled to move too fast.

The list of delegates to the Mixed Committee which had been submitted by the Chairman was adopted.

SECOND MEETING

held at Paris on May 26th, 1923, at 4.30 p.m.

7. Appointment of a Delegation to represent the Committee at the Celebration of the Pasteur Centenary.

The CHAIRMAN requested the Committee to decide upon the appointment of a delegation to represent it at the celebration of the Pasteur Centenary at Strasburg. This delegation would be composed of the Chairman, the Vice-Chairman, the Medical Director and such other members as might desire to go.

(Agreed.)

8. Appointment of a Malaria Expert to assist the Albanian Government.

Dr. RAJCHMAN read a letter sent by the Albanian Government to the Secretary-General and transmitted by him to the Health Committee (Annex 4).

He pointed out that the Council of the League had been requested by the Albanian Government to appoint a technical adviser, and that the Albanian Government had urgently requested

the Health Committee to decide upon this appointment in the course of the present session. He would therefore ask the Committee to consider this request at the same time as the questions regarding the service of epidemiological intelligence.

Sir George BUCHANAN recommended that on this question the Committee should refer to the document prepared by Colonel James, the well-known malaria specialist, who had suggested that the Health Committee should determine the anti-malarial methods most suitable from the economic and financial as well as from the scientific point of view, taking into consideration the characteristics of districts, the form taken by the epidemic, etc. These questions were dealt with in the report which it had been agreed to consider. As Albania's request was closely connected with this subject, and as it was of a practical nature, it would be desirable that the Sub-Committee which would deal with the question should examine both documents together.

Dr. CHODZKO seconded Sir George Buchanan's proposal and also suggested that a malaria map of Europe should be prepared. At the present time many countries were being attacked by this epidemic. Greece, for example, was in a very bad situation and even showed signs of racial degeneration due to malaria. Tuberculosis, which was closely allied to malaria, was also spreading in an alarming manner in that country. The death rate at Salonika amounted to 45 per thousand. The situation was also bad in Spain, Russia and the eastern provinces of Poland.

Sir George BUCHANAN replied that Dr. Chodzko's statements were already substantially contained in Colonel James's report, but he was willing to support the proposal to prepare a map showing the present situation of malaria in Europe.

9. Appointment of a Sub-Committee on Epidemiological Intelligence.

The CHAIRMAN referred to the resolution adopted by the Committee to the effect that a Sub-Committee should be appointed in order to deal with the question of epidemiological intelligence concurrently with the malaria question. He proposed that Sir George Buchanan, Dr. Lutrario, Dr. Chodzko, Dr. Cumming and Dr. Carrière (if the latter could find the time) should be appointed as members of this Sub-Committee.

(Adopted.)

10. Vaccination in Greece. Proposal that Dr. Wroczynski should be heard.

Dr. RAJCHMAN proposed that Dr. Wroczynski, who was a member of the Commission which was dealing in Greece with the vaccination campaign in the Salonika district, should address the Committee.

On the proposal of the CHAIRMAN, it was decided that Dr. Wroczynski should address the Committee on Sunday, May 27th, at 4 p.m.

11. Report on Investigations regarding the Standardisation of Sera, Serological Tests and the Standardisation of Biological Products.

Dr. MADSEN, Chairman, gave an account of the investigations regarding the standardisation of sera, serological reactions and the standardisation of biological products. He pointed out that all these questions were still under discussion. In connection with serological tests, one of his assistants had been sent round to the various laboratories which dealt with that important question and had made a report on this subject which was too technical to be distributed but which would be at the disposal of the members of the Committee.

The other questions regarding anti-tetanic, anti-pneumococcic and anti-dysenteric sera and the serological tests of syphilis were still under discussion, though a certain amount of progress had already been made.

As regarded the standardisation of biological products, the Chairman recalled the fact that at the January session he had been authorised to summon a technical conference. He intended to summon this conference three days before the Edinburgh Conference; it would include representatives from the United States, Great Britain, the Netherlands, France, Germany and Austria and would deal with the question of biological products.

Sir George BUCHANAN warmly approved. He could assure the Committee that the Scottish Board of Health would be happy to give all facilities to the experts appointed for this meeting. If the Health Committee adopted this decision and would send notice of it to the Secretary of State for Scotland, either through himself or through some other intermediary, the latter would no doubt do his best to give an official welcome in Edinburgh to the delegates of the Health Committee appointed to discuss this problem.

The Chairman's proposal was adopted.

12. Discussion of the Medical Director's Report.

The CHAIRMAN opened the discussion on the Medical Director's report on the work of the Health Section from the end of January until the end of April 1923 (Annex 2).

Dr. RAJCHMAN stated that as the text of the report had been slightly modified during his absence in America, he would call the Committee's attention in the course of the report to certain necessary alterations.

The Committee then considered in turn each of the paragraphs of the report.

I. Resolutions of the Council relating to the Work of the Health Committee.

Sir George BUCHANAN asked whether a statement could not be added to the second paragraph to the effect that M. Viviani, in his report to the Council, had stated that the League of Nations would not itself meet any fresh expenditure in respect of the exchange of health personnel.

The members of the Committee would thus know the exact position when they utilised the Medical Director's report for purposes of reference.

Dr. RAJCHMAN replied that M. Viviani's observation had referred exclusively to health personnel in 1923.

Sir George BUCHANAN proposed to add a sentence to the effect that M. Viviani's report contained certain additional remarks in order that the members of the Committee might refer to them.

(Agreed.)

As regarded Professor Miyajima, he had left Europe and would not be able to return for a very long time. Members of the Committee would wish to take this occasion to express their regret at his departure. By his personal charm and expert scientific knowledge the Professor had won general esteem, and all desired him to return once again and to resume his part in the common work.

The CHAIRMAN, on behalf of the Committee, warmly seconded Sir George Buchanan's remarks. He and his colleagues unanimously regretted that Professor Miyajima could not continue his valued collaboration.

M. KUSAMA, on behalf of Professor Miyajima, thanked the Committee for this expression of good-will. He knew from a letter which he had received from the Professor that the latter had not ceased to interest himself keenly in the absorbing work of the Committee.

II. Interchange.

The CHAIRMAN stated that this question called for special discussion and would be considered together with item 6 of the agenda.

III. Service of Epidemiological Intelligence and Public Health Statistics.

Dr. RAJCHMAN stated that he had only returned that morning from the United States. While he had been in New York he had had an opportunity of conferring with the representatives of the Rockefeller Foundation on the working of the Health Organisation of the League of Nations, more especially regarding the interchange and service of epidemiological intelligence and public health statistics. It was considered that, in order to enable a service of epidemiological intelligence to operate systematically and methodically, a service of public health statistics which would satisfy all requirements would be necessary in the various countries of the world.

It was quite true that statisticians familiar with vital statistics were somewhat rare, even in countries in which most progress had been made in this respect, such as Great Britain, the United States and Switzerland.

The question had been raised whether it would not be desirable that the Rockefeller Foundation should interest itself in this problem. Dr. Rajchman asked Dr. Russell whether it would not be possible for the International Health Board to provide facilities for statisticians who specialised in vital statistics to travel in order to make investigations.

This idea appeared to be entirely in accordance with the plans of the Rockefeller Foundation, but its representatives thought that it would be much simpler to ask the Health Committee whether it would not be prepared to accept a further subsidy and take over this work itself. The representatives of the Rockefeller Foundation suggested that the simplest plan perhaps would be to extend the present arrangement by means of correspondence. Dr. Rajchman had replied that he could not commit the Health Committee in advance but that he could not wholly see his way to accept the idea of a mere exchange of correspondence.

After discussion, the following arrangement had been arrived at : Dr. Russell, as a Director of the International Health Board, and Dr. Rajchman had exchanged letters in similar terms, enclosing a small memorandum (Annex 5) containing a summary of the conversations which had been exchanged.

The memorandum and letter had been submitted on May 22nd by Dr. Russell to his Board at New York ; the Medical Director now submitted these documents to the Committee and pointed out that it would have to discuss these suggestions and to take any decisions which it might think fit. The proposal was to the effect that :

“ It would perhaps be desirable to have at the Health Section's disposal an annual credit of 21,000 dollars (about 105,000 gold francs), which would enable six statisticians annually to travel for purposes of research. ”

The research could be carried out in those countries which were best organised as regarded vital statistics. Six statisticians would be enabled to come to Geneva for a period of three to six months and to collaborate with the epidemiological intelligence service in order to organise in the most suitable way an exchange of ideas, information and methods.

The Medical Director therefore asked the Committee to authorise him to add an annex to his report ; this annex could be discussed by the Sub-Committee on Epidemiological Intelligence which the Committee had decided to appoint.

The CHAIRMAN expressed his thanks to the Rockefeller Foundation for this fresh proof of the interest which it displayed in the work of the Committee, and also to the Medical Director for the successful action which he had taken.

The question was referred for discussion to the Sub-Committee.

Sir George BUCHANAN stated, with regard to the observation at the end of this section referring to Dr. Greenwood, the Medical Statistical Officer of the Ministry of Health, that the latter was glad to assist the League of Nations and the Health Committee and had already undertaken to direct certain comparative studies of national statistics which were being carried out by an assistant paid by the League.

When these studies had been completed, they would, of course, be sent to the statisticians of the countries concerned. The wording of the paragraph, however, seemed to suggest that a kind of super-arbitrator would be appointed to criticise the work of his colleagues from other countries ; Dr. Greenwood, however, had no desire to express any opinion whatever on the work of his colleagues. It would therefore perhaps be better to omit the second part of the sentence in question.

(Agreed.)

IV. Study of Social Hygiene and Public Health.

Dr. RAJCHMAN asked permission to add the name of Surgeon-General Cumming, a high authority who had promised to draw up a report on the subject.

(Agreed.)

Professor Léon BERNARD asked whether the question was to be discussed at the next session held at Geneva in August.

Dr. RAJCHMAN thought not.

Professor Léon BERNARD stated that he had written to all his colleagues who were professors of health asking them for their views as to this instruction and the way in which it should be given. The time required for his work would therefore depend on the time taken by these replies in reaching him.

V. Tropical Diseases.

The CHAIRMAN thought that there was no need to discuss this question, as the Committee had already heard a verbal report that morning from Dr. Balfour.

Dr. RAJCHMAN reminded the Committee that a special report had been drafted on item 9, namely : the provisional report of the Expert Committee on Sleeping Sickness and Tuberculosis. This Expert Committee would, of course, continue its work, as would also the Sub-Committee of the Health Committee, under the chairmanship of Dr. Calmette. When the final report of the Expert Committee was submitted, a report would be drafted by the Special Sub-Committee.

Further, he thought it would be desirable to invite Dr. Chagas and Dr. Nocht, two experts who had taken an active part in the work of this Committee, to take part in the work of the Sub-Committee of the Health Committee.

(Agreed.)

VI. *Far Eastern Enquiry.*

Dr. RAJCHMAN stated that Dr. Norman White had received an especially warm welcome in Japan.

The CHAIRMAN, on behalf of the Committee, proposed that the Committee should send its sincere thanks to the Japanese authorities who had aided Dr. Norman White in his enquiries in the Far East and had accorded him such a warm welcome.

VII. *Sub-Committee on Waterways.*

Dr. LUTRARIO stated that it would be desirable that all the members of the Committee should become acquainted with the report which had been distributed and also with the draft Convention drawn up by the Sub-Committee ; these documents could be discussed on the return from Strasburg.

Dr. CHODZKO asked whether it would not be advisable also to refer to the report of Dr. Breger and the report on Hungary.

Dr. RAJCHMAN stated that all the documents had been distributed to the members of the Sub-Committee but that the other members of the Committee could ask for any other documents which might be of interest to them.

VIII. *Opium Sub-Committee.*

The CHAIRMAN considered that this question should not be discussed at that meeting, as it required special consideration.

Sir George BUCHANAN asked what was the exact position of Dr. Lenz. He would like to know whether Dr. Lenz, when expressing an opinion before the Mixed Sub-Committee on Opium, was speaking on behalf of the Health Committee or was merely expressing a personal opinion in his capacity as an expert.

Dr. RAJCHMAN replied that there was no intention of making Dr. Lenz an expert adviser to the Mixed Sub-Committee on Opium. He was an official of the Secretariat who was placing all his zeal and knowledge at the service of the Sub-Committee and was supervising the carrying-out of all the decisions taken with regard to enquiries.

Dr. LUTRARIO stated that he had had a very interesting conversation with Dr. Lenz. A law on narcotic drugs had recently been promulgated in Italy, by which certain executive regulations, containing a list of substances to which the law applied, had to be published as soon as possible.

As a result of the conversations held between Dr. Lenz and Dr. Lutrario, it was possible to contemplate certain important modifications in this list which perhaps would otherwise never have been introduced.

Sir George BUCHANAN stated that he had raised the question on account of the political and administrative effects which it might entail ; it would have to be made clear that when Dr. Lenz expressed an opinion on any point the Health Committee was not in any way responsible for that opinion.

Dr. RAJCHMAN felt that he must remind Sir George Buchanan that the practice of the Health Section had never varied ; whenever its opinion had been asked (as it had been recently on the subject of narcotic drugs) it was not the members of the Health Section who had to express an opinion ; it was the province of the Health Committee or the Health Sub-Committee to make replies. Thus, at the first meeting of the Mixed Sub-Committee on Opium, at which Dr. Carrière had taken the chair, it had been pointed out that Dr. Norman White's opinion did not in any way commit either the Health Committee or the Sub-Committee.

Dr. CARRIÈRE confirmed the Medical Director's statement.

IX. *Publication of Reports presented to the Serological Conference at Paris.*

Sir George BUCHANAN asked that when, in the case of English contributors, the corrected proofs had been revised and a further proof was available, the latter should be sent to the contributors for final reading. He asked this because the printer's corrections had been heavy. He would also be glad of an assurance which he could communicate to Sir Walter Fletcher and to the English contributors that the French text would be altered to correspond with the English.

Dr. RAJCHMAN replied that action had been taken exactly on the lines laid down by Sir George Buchanan. He added that the position was a very delicate one.

The Chairman had reminded them that at the Second Serological Conference held at Paris in the previous October all the reports had been communicated in advance and had been returned signed by their authors. In these circumstances it was reasonable to assume that

these documents had received their final form, and it was therefore thought that they could be sent to the printer.

When the proofs had reached London, however, the Health Section had been told that the authors — expressing their surprise — had returned the proofs with very considerable alterations, based in some cases on laboratory work carried out after the Conference in November 1922. As publication had unfortunately been delayed, the Secretariat would be glad to receive any amendments that might be desired. This was the chief cause of the misunderstanding that had arisen — if there were a misunderstanding.

Sir George BUCHANAN observed that on another occasion, when a work of this magnitude was published by the League, a technical editor might be appointed at the outset to be completely responsible for the editing in both languages.

Dr. RAJCHMAN pointed out that this had already been done. One of the members of the Expert Conference, Dr. Louis Martin, was responsible for the French text, and as regarded the drafting of the English text, which had only been decided upon at the last moment, no English editor had as yet been secured. For future sessions it would be advisable to have two persons: one, a member of the Health Section, to supervise the work, and the other, a member of the Conference, to revise the text from the technical point of view. This question was a complicated one and would have to be considered again.

13. Appointment of a Delegate to the National Tuberculosis Congress at Strasburg.

The CHAIRMAN communicated a letter from Professor Léon Bernard requesting the Committee, on behalf of the Bureau of the National Tuberculosis Congress, to send a representative to that Congress, which was to be held at Strasburg from June 2nd to 5th, 1923. The Chairman proposed that Professor Léon Bernard himself should be delegated to the Congress.

(Adopted.)

14. Report on the Activities of the Industrial Health Service of the International Labour Office.

Dr. CAROZZI read his report (Annex 6), which raised two points. As regarded the organisation of the medical inspection of labour, information had been asked for from the various States, but, as the replies to the questionnaire were somewhat incomplete, the report would for the moment deal only with medical inspection in Europe.

The questionnaire also referred to information on the professional training of inspectors of labour. As the replies sent in were incomplete, it would perhaps be advisable to postpone the enquiry and to communicate directly with professors of the hygiene and pathology of labour. Moreover, for the last four or five months the Committee had been occupied in the preparation of a list of unhealthy occupations — a somewhat comprehensive task. The list of toxic substances which had been prepared some twenty years previously for the Basle Association for the Protection of Workers was too incomplete to be of real use. Moreover, before the war the question of unhealthy occupations had been dealt with chiefly in works which were inconvenient for purposes of consultation on account of their size.

A more practical plan had now been conceived. A list of unhealthy occupations based on the nature of the disease had been drawn up. The various articles of this scheme had been distributed to all the members of the Advisory Health Committee. Each product would be examined in turn from the chemical and physical point of view, and then its method of preparation and use and the questions of health and pathology relating to these two factors, then the methods of research connected with the product in the various stages and in the organisation impregnated with the poison. Finally, legislation would be dealt with, both general legislation for women and children and special legislation, to be as detailed as possible.

If necessary, application would, of course, be made for the help of outside experts to deal with special aspects of the question.

The report of the Coal Commission would be submitted next month to the Governing Body of the International Labour Office and might perhaps be brought before the Committee at its September session.

The question of bibliography also required to be considered by the Health Committee.

The Health Section was at the disposal of the Health Committee as regarded communications to be made in administrative and university circles.

Sir George BUCHANAN proposed that *Dr. Carozzi's report on the activities of the Industrial Health Service of the International Labour Office should be placed on the agenda of the next session* in order that it might be more carefully considered by the members of the Health Committee.

(Adopted.)

15. Resumption of Discussion of the Report of the Medical Director.

X. Sanitary Courses in Eastern Europe and Anti-Epidemic Museums.

Dr. RAJCHMAN observed that it was stated that a sum of £800 had been kept in reserve for fresh work in 1924. There was reason to hope that additional funds would be obtained in 1924 without it being necessary to draw on the budget of the League of Nations.

The CHAIRMAN congratulated the Medical Director on the ease with which he had secured funds.

XI. Conference of the Red Cross Societies of Eastern Europe in Warsaw, April 9th - 13th. 1922.

No remarks.

XII. Vaccination in Russia.

Dr. RAJCHMAN said that he would deal with this question later on when the Committee came to discuss the work of the Epidemic Commission. He was glad to inform the Committee that Professor Zinsser, of Columbia University, New York, would start in ten days for Moscow to co-operate with the Russian Committee on Vaccination.

The report of the Medical Director was approved, except for the portion reserved for subsequent discussion.

16. Budget of the Health Organisation for 1924.

Dr. RAJCHMAN observed that an abnormal situation had arisen in regard to this year's budget. The budget had to be submitted to the Assembly of the League of Nations and had to be examined by a Supervisory Committee set up by the Assembly. Proposals had to be submitted to this Supervisory Committee in sufficient time to allow the draft budget to be communicated to all the Governments four months before the meeting of the Assembly.

As the Assembly met on September 3rd, the Supervisory Committee arranged its own meeting for May 2nd. It was one of the most important duties of each of the Technical Organisations of the League to pass its own budget. However, in the circumstances, it was impossible to do so in sufficient time. The Secretariat accordingly suggested to the Chairman of the Committee that a Sub-Committee should be appointed which could be empowered to approve the budgetary proposals. This had been done, and the proposals had been approved by the Sub-Committee so formed subject to certain modifications suggested by its members, in particular by Dr. Carrière.

The Supervisory Committee had reduced the budget only by 50,000 gold francs out of a total of 750,000 gold francs. The sum passed by the Supervisory Committee was practically the same as the year before, *i.e.* 700,146, as compared with 700,500 gold francs.

There was, however, a difference in the allocation of the credits. It was necessary to increase the personnel of the Health Section and to create a new category, namely, an Epidemiological Intelligence Service. This category already existed in actual fact, but it was not shown in the budget for 1923 because its salaries had been paid from the funds provided by the Rockefeller Foundation. As the Assembly had decided that all the funds received by the League of Nations must be shown in the budget, the estimates for 1924 had been drawn up in conformity with this procedure. The total budget of the Health Organisation thus amounted to 1,181,472 gold francs, from which 481,326 gold francs, the amount of the Rockefeller subsidy, had to be deducted. The balance borne by the League of Nations was 700,146 gold francs.

It was desirable to increase the credits for the Epidemiological Intelligence Service. The Rapporteur, in agreement with Mr. Sydenstricker, considered that it was desirable to set out the expenses under this head in greater detail. They had been divided into four categories.

The chapter "Health Committee" had been divided into two headings; under the first were shown the expenses of the various sessions of the Committee, including the drawing-up of the minutes; under the second were shown the special enquiries and the publication of replies. Then there were other chapters representing credits for exchanges and for the maintenance of the health personnel. In this chapter there were only two headings; the first represented the contribution of the League of Nations (which had fortunately been maintained at its former figure), and the second represented the Rockefeller subsidy.

They could not, of course, be sure that the Assembly would not reduce these estimates, but they must hope that it would not do so. As the Rockefeller Foundation had calculated its subsidy of the previous year on the basis of this budget, it would be regrettable if the Fourth Committee of the Assembly were to reduce these estimates.

Sir George BUCHANAN thought that it would perhaps be desirable to examine the manner in which the credits had been allocated to the various chapters. For this purpose, he asked that the question should be left open till the next meeting of the Committee.

The CHAIRMAN pointed out that, as the budgetary proposals had been approved, they were now in their final form.

Sir George BUCHANAN replied that he would nevertheless like some information as to the basis on which the expenses had been computed.

For instance, a very small sum had been allocated to health enquiries, while a large sum was devoted to the creation of new posts in the Secretariat. He wished to understand the policy adopted in this work of allocation.

The CHAIRMAN considered that it was too late to modify the budget of 1924. The observations of Sir George Buchanan could be taken note of for subsequent budgets.

Sir George BUCHANAN observed that by the rules of their procedure the appointment of all Sub-Committees had to be notified to the members of the Health Committee. It seemed desirable that this rule should be observed in future and that the reports submitted by the Sub-Committees should be forwarded to all the members of the Committee.

As regarded the Sub-Committee which had approved the budget, he had never been informed of its constitution; the Medical Director had merely informed him that he intended to take steps for it to be appointed.

Dr. RAJCHMAN said that he regretted that he had to give explanations on this point. To begin with, the draft budget of the Health Organisation had already been approved by the Supervisory Committee and was therefore in its final form.

Moreover, Dr. Rajchman had had to accept responsibility as secretary of the Committee. In other organisations the budget had simply been submitted after the Chairman had been consulted. He had thought it desirable to suggest the appointment of a special Sub-Committee. This body had examined not only the aggregate total but also its allocation to the various sections of the budget. All the members had been asked to give their views. In consequence, it was no longer the draft estimates but the budget approved by the Health Committee.

As regarded the question of notification, Dr. Rajchman had made a verbal communication to Sir George Buchanan as long ago as February last, not imagining that it was necessary to notify him in writing of the nomination of a Sub-Committee of which he himself was a member. Moreover, Sir George Buchanan had been given private information by letter in regard to the budgetary proposals. It was only by a regrettable oversight that he had not received the official letter which ought to have accompanied the estimates and the memorandum annexed to them. Dr. Rajchman expressed his deep regret for this error on the part of the Section for which he was responsible. But it was none the less the case that Sir George Buchanan had received complete information.

Sir George BUCHANAN pointed out that he had no intention of making a complaint in regard to the accident which had prevented him from receiving the letter in question. He merely considered that, from the point of view of their rules, an official letter ought to be sent to each of the members informing them of the constitution of any Sub-Committee which had been appointed, of the manner in which it was composed, and of its programme.

In the case in point, though he had received a private letter giving him this information, he had expected an official letter to confirm it; it was only when he had asked for information that he had been told of the meeting of the Sub-Committee and of the decisions which it had taken.

He thought therefore that, in order to avoid misunderstanding in future, it would be best to proceed in the manner which had just been indicated.

The CHAIRMAN observed that matters had been conducted in a perfectly regular manner, seeing that all the members of the Committee — with the regrettable exception of Sir George Buchanan — had received the announcement.

THIRD MEETING

held at Paris on Sunday, May 27th, 1923, at 4.30 p.m.

17. Health Situation in Greece. Statement by Dr. Wroczynski, Commissioner of the League of Nations.

The CHAIRMAN called on Dr. Wroczynski to make a statement regarding the health situation in Greece.

Dr. WROCZYNSKI reminded the Committee that the campaign undertaken by the Epidemic Commission had begun in December, 1922. As a result of the national disaster, Greece, which was at the same time undergoing a political crisis, had been flooded by some million

refugees. A distinction should be made between two classes of refugees : first, refugees from Eastern Thrace, about 400,000, who came from an agricultural country ; and, secondly, the refugees from Asia Minor, some 600,000, including a very large proportion of artisans and small traders. Accordingly the evacuation of the refugees assumed a different character.

In Asia Minor the inhabitants had been brutally driven out by the Turkish army and had been able to take only their clothing with them. They had been transported by Allied ships to the various ports and islands of Greece. These refugees had crowded into Salonika, Cavalla and Eastern Macedonia, whilst a large number had gone to Athens, the Piræus and the rest of Greece.

No measures had been taken to control their movements. The refugees naturally collected in the towns, where they had the best chances of finding work. In December, there were as many as 70 % of them in towns with more than 5,000 inhabitants. The population of several of these towns had been doubled within a few weeks.

The refugees had concentrated mainly in the eastern provinces of Thrace and Macedonia. Their number decreased towards the west. The arrival of this horde of refugees at first raised a serious problem from an economic and health point of view.

The Greek State Institutions for Health Control were in a rudimentary condition. There was in the Ministry of the Interior a Health Department consisting of three or four persons, a lawyer being responsible for the application of the Health Law, an old German law dating from 1835 and which had been introduced by King Otho.

The executive machinery for health control, from prophylaxis against venereal diseases to the control of foodstuffs, was entirely in the hands of the police. There were hardly any health officers at all.

The advice given by the Epidemic Commission, the American and British Red Cross Societies and other organisations brought the Greek Government to a realisation of the danger threatening Greece owing to her defective health organisation.

A Ministry of Health and Social Welfare was organised in December : Health Officers were later introduced into the prefectures.

There was, from an administrative point of view, a wide difference between the prefectures in Old Greece, *i.e.* Greece properly so-called and the islands, and the prefectures in New Greece, *i.e.* Macedonia and Thrace as far as the river Maritza. The prefectures in Old Greece were directly subordinate to the central authorities. In New Greece there were two Governors, one of Eastern Macedonia and Western Thrace residing at Gumuldjina, and the other of Western and Central Macedonia residing at Salonika. These Governors possessed full ministerial powers and could issue decrees of every kind, whether sanitary or otherwise.

The Health Service which had just been created was encountering great difficulties owing to the absence of health officers of any kind.

Further, a service for the medical inspection of refugees, composed of doctors and civil officials, had been set up for the purpose of supervising the immense conglomerations of refugees.

This service had given good results, if the lamentable health conditions of the refugees were taken into consideration. All public buildings were requisitioned for housing these hosts. In the country each family of peasants was required to house a family of refugees.

The position with regard to epidemics in December and January had been favourable in spite of the miserable condition of the refugee population. There had been very few cases of infectious disease.

However, measures had to be taken to meet the danger of smallpox and typhus.

A campaign on rational lines was undertaken against typhus in conjunction with the Minister of Health and the Red Cross Societies. Their first endeavour was to prevent new cases being introduced into the country and later to conduct an active campaign in the interior.

By January there were centres of the disease at Athens, the Piræus, Salonika, Cavalla and Dedeagatch. A start had been made with the organisation of quarantine camps, one in the island of Makronissos, which had proved an unfortunate choice owing to the lack of water, the other at St. Georges, with a hospital of 300 beds and a disinfecting installation. As the climate was a good one, it was possible to accommodate 3,000 persons under canvas.

These two quarantine stations had not been as effective as could have been desired. A large number of cases of typhus had slipped through. This was mainly owing to the deficiency of material, and more especially of water.

Here again a distinction should be made between Old and New Greece. In Old Greece the lack of material gave rise to all sorts of difficulties. In New Greece, on the other hand, thanks to the co-operation of the military medical officers, it had been possible to conduct an energetic campaign against typhus, and this disease had disappeared. In Old Greece the development of the disease in its centres, and principally that of the Piræus, continued. It should be mentioned that water at the Piræus is sold in the market ; it is brought from the islands by boat.

As regarded smallpox, there were in December and January several centres of this disease throughout Greece, mainly at Salonika, the Piræus and Athens.

The Commission began vaccinating at the end of January. In this connection also the effect of the administrative differences between Old and New Greece should be noted. In Old Greece, Colonel Gauthier, on behalf of the Commission, had asked the Ministry of Health to issue an order making vaccination compulsory for refugees and, if need be, for the whole population in the affected areas. The Ministry of Health had avoided putting this measure into effect, as it was reluctant to put too much pressure on the population.

In New Greece, on the other hand, Dr. Wroczyński had himself drafted the text of the decrees making vaccination compulsory, and had requested the Governors to promulgate them. The compulsory vaccination of refugees had given very good results.

Concurrently with anti-smallpox vaccination, the Commission had made a start upon vaccination against typhoid and cholera. The method was as follows : a first injection of polyvalent tetra vaccine, that was to say, against typhoid, para-typhoid, *a*, *b* and *c*, and cholera, simultaneously with vaccination against smallpox. Seven days later a second injection of polyvalent vaccine, whilst the results of the smallpox vaccination were investigated at the same time. A register had been kept of all persons vaccinated for purposes of statistics and control.

The work of vaccination had met with a stiff resistance on the part of the refugees and the population.

In Macedonia and Thrace it had been necessary to have recourse to the help of the police and the gendarmerie in order to perform vaccinations by force ; it could hardly be expected that propaganda would be effective within the brief space of three months.

Propaganda had, however, been carried on, thanks to the good offices of the American Red Cross, which had printed large placards and organised lectures, and also through the priests, including the Mohammedan clergy, who had strongly urged the people to submit to the measure.

The Commission had appealed also to all medical societies. In spite of these various methods of propaganda, it must be admitted that the success of vaccination had been due to coercion.

All difficulties had been surmounted during January, February, and March with the aid of Colonel Gauthier. In April the vaccination campaign was in full swing. About 700,000 persons had been vaccinated against smallpox, typhoid fever, and cholera up to May 15th, thus making the total number of vaccinations 1,500,000. The cost of each vaccination was insignificant, about 1 drachma, that was to say 1d., although the cost of living in Greece was very high.

There had been in all 6,000 to 7,000 cases of typhus and 8,000 cases of smallpox in Greece.

The third disease which had to be anticipated was dysentery. Statistics from Athens and Salonika showed many deaths due to dysentery. The forms taken by the disease at Salonika were probably amoebic dysentery and also bacillary dysentery. Unfortunately, there was only one bacteriological laboratory, the head of which was also the principal doctor of a hospital with a hundred beds. He was accordingly a very busy man.

The Epidemic Commission had succeeded in obtaining an order from the Minister concerned making notification of infectious diseases compulsory. The results had not been very satisfactory, as the doctors were not accustomed to the system of notification. It had been necessary to make use of data, as regarded mortality, supplied by the civil officials keeping the registers of births, marriages and deaths.

The first cases of dysentery had made their appearance at Cavalla just before Dr. Wroczynski's departure from Greece. A few cases had already been observed at Salonika. A bacteriological examination had disclosed the presence of bacillary dysentery. Colonel Gauthier intended to begin immediately upon dysentery vaccination by means of the buccal vaccine and the polyvalent sexta vaccine. The experiment was of great interest owing to the concentration of refugees in certain places, which made it possible to form an accurate estimate of the results of the vaccination.

The fourth disease, which must always be apprehended in eastern countries, was malaria. Macedonia and Thrace were the chief districts affected, and the rate of mortality was high.

By means of the data left behind by the Allied armies at Salonika in 1916, 1917 and 1918, and of the statistics published between 1914 and 1922, Dr. Wroczynski had drawn up a table showing the causes of death at Salonika. The average rate of mortality at Salonika was between 40 and 50 per 1,000. In 1922 it declined to 33 per 1,000, with 5,700 deaths among 174,000 inhabitants. The causes of death were distributed as follows : 1,300 out of 5,100 deaths were due to broncho-pulmonary affections ; 1,100 to gastro-intestinal affections, including dysentery ; 873 to tuberculosis of the lungs and 549 to malaria. Next in order came a more curious cause of death, namely, premature child-birth, the figure for which was 184. The rate per 1,000 for these diseases was, broncho-pulmonary affections 664 per 1,000, gastro-intestinal affections 554, tuberculosis of the lungs 437, malaria 274. Malaria was accordingly a very dangerous disease.

The doctors explained the ravages of tuberculosis in Salonika, Macedonia and Western Thrace by the prevalence of malaria, which was a predisposing causal agent.

Nothing had yet been done to combat malaria. There was an anti-malaria league at Salonika. Dr. Wroczynski had undertaken an investigation for discovering in the first place the breeding-grounds of the mosquito. The population took no measures to combat malaria. There was not enough quinine, and this drug was not sufficiently well known. The speaker had made enquiries regarding the number of cases of chronic malaria amongst the refugees. Out of 2,000 refugees in the camp at Lambetz, he had discovered 65 % suffering from enlarged spleen. From a clinical point of view, the camp doctor had stated that there were several forms which were malignant from the outset ; the patients died in three, four or five days. Examination with the microscope showed that there were many ordinary forms, but that there were other forms as well, caused by plasmodium falciparum, in addition to tropical forms of the disease. In many of the hospitals visited by the speaker, he had invariably found immense numbers of cases of tuberculosis and of malaria.

There was a great deal of tuberculosis and malaria, and also of syphilis, in many of the Macedonian and Thracian villages with a predominantly Turkish population. In the villages visited by the speaker, accompanied by Colonel Treloar, he had found children and women in advanced stages of syphilis ; this was a disease to which no attention was paid. The treatment of syphilis had been begun at the British Red Cross Hospital at Palazli. The work had had to be abandoned after a few weeks as there had been too many patients and not enough medicine. There were no accurate data regarding syphilis owing to the absence of statistics.

It should be noted, in explanation of the successful vaccination campaign, that, as it had been impossible, owing to the administrative chaos at the beginning, to employ the refugee doctors or those in the towns for purposes of vaccination, the Commission had, with the aid of the Ministry of Health, engaged doctors and medical students exclusively for the purpose of vaccination. The medical staffs formed in this way had been sent everywhere throughout the country. A system of control had been organised and the operators had been instructed to keep registers ; the Commission had undertaken several journeys and had asked the authorities, prefects and governors to supervise the work of the medical staffs.

The persons recruited in this haphazard fashion had shown admirable devotion to duty and had worked excellently for a very modest remuneration, and that, too, not without risk, as there had been two deaths.

The results obtained were considerable, taking into consideration the feeble resources available. The only real service which had been rendered to Greece from a health point of view was this vaccination campaign.

As regarded the health work undertaken by foreign organisations, the American Red Cross had at first drawn up a programme including the installation of 5,000 beds for epidemic cases. It had since modified its plan of campaign. At the moment it possessed 100 beds at the Piræus for epidemic cases. It had, however, carried on the campaign by organising dispensaries, which had been extremely useful.

The English Red Cross had only arrived in March. It had already installed two hospitals : one at Drama and the other at Palazli (near Gumuldjina), which were doing very good work.

Greece was almost entirely deficient in hospital material. The Salonika hospital had no sheets, blankets or medicines at all. Dr. Wroczynski regretted that he had not possessed the same resources as had been at his disposal during the typhus campaign in Poland. With a quarter of the material which he had had at Vilna he could have fully organised the hospital and anti-epidemic services in Macedonia.

Dr. Wroczynski offered his apologies for the omissions in his account and asked leave to submit later a complete report founded on the statistical information which he had received.

The CHAIRMAN thanked Dr. Wroczynski on behalf of the Health Committee for his very interesting statement, and also for his good work in Greece following upon his achievements in Poland.

The members of the Committee wished to ask certain questions.

In the first place there was a very important point, namely : that of the relations with the local authorities. The Committee would be grateful to Dr. Wroczynski if he would give further particulars regarding the representations which had been made to the national health authorities and to the other health missions, Red Cross Societies and other organisations, and of the relations which had been established with those bodies.

Dr. WROCZYNSKI replied that there were two medical officers in Thrace and Macedonia : one for each Government ; they possessed, however, no means for taking immediate action with regard to vaccination.

It had been necessary to proceed methodically ; orders of a general nature had been drafted making vaccination compulsory. These orders had been signed by the Governors of Thrace and Macedonia. Other orders had been drafted subsequently providing for the necessary measures of coercion.

Permanent vaccination stations had been set up in the small villages ; all possible means had been used — propaganda, the police, the gendarmerie — to induce the refugees to come in.

This had not been enough ; they had had to appeal to the American Red Cross, which, after first refusing, had eventually kindly undertaken to co-operate in a joint action by distributing bread cards. In this way it had been possible to vaccinate 95 per cent. of the refugees at Salonika, due in a large measure to the refusal to give a bread card to persons who did not present themselves for vaccination.

This method, which some people might be inclined to criticise with some severity, had, however, enabled them to obtain the necessary results in all the places where the American Red Cross was at work. It had also been used by Colonel Gauthier in his area.

Further, the prefects had drafted local orders ; they had instructed the police and gendarmerie to support the work of the Commission and had even enforced fines and imprisonment by way of punishment. In this manner it had been possible to make vaccination universal.

There had been difficulty in obtaining good results in certain places, for example, Cavalla, where there was a working-class population of 8,000 artisans, mostly employed in the tobacco trade. Dr. Wroczynski had appealed to the workmen's associations. He had given a lecture to their chairmen and also applied to the Association of Tobacco Merchants which includes French, British and American subjects. Thus the workers had been finally persuaded to present themselves for vaccination of their own accord.

The Military Governor of Thrace at Drama had passed a measure ordering five years' imprisonment for any person who failed to be vaccinated within three weeks. In this way they succeeded in vaccinating all the inhabitants of Drama and Cavalla within four weeks.

Dr. Rajchman had given instructions that the work of vaccination should be finished by May 1st and they had been obliged to take these somewhat Draconian measures in all places where several cases of smallpox had been notified. Generally speaking, they had obtained successful results up to 75 per cent. from smallpox vaccination.

As regarded the doctors, they had shown no interest in the social aspect of the question, and they would require a thorough education in this respect. They had, however, always co-operated when asked to do so.

Colonel Gauthier had had great difficulty with the Ministry of Health, as the latter, although desirous, in principle, of making vaccination compulsory, had invariably refused to put pressure upon the refugees for political or other reasons.

Colonel Gauthier's position was, moreover, one of great difficulty, for he had at that time 50 cases of smallpox a week at Athens, whilst there were 30 cases a week at the Piræus. As action had nevertheless to be taken, he had introduced the system of itinerant vaccination; for this purpose he had engaged some twenty persons who, with the help of the police, had made a house-to-house visit. This work had been extremely heavy, especially in the very hot weather. They had succeeded in vaccinating in this way 67,000 persons, so that the epidemic was on the decline in the Piræus. It was still spreading at Athens, but there was good ground for hoping that within two or three weeks the whole population would be vaccinated against smallpox.

As regarded typhoid fever he would give the Committee two examples: a water-conduit had been infected at Athens, where an epidemic had broken out in a quarter which sheltered large numbers of refugees; but they had all been vaccinated beforehand and the 300 cases of typhoid fever notified had occurred only among the unvaccinated population. Scarcely more than 15 cases of typhoid had been notified at Cavalla; at the moment this disease had vanished completely. This was due to the fact that, out of a total population of about 35,000 inhabitants, 34,000 had been vaccinated.

Where the Warsaw polyvalent vaccine had been used, reactions had been only very slight, so that there had been no energetic protest from the population. The same could hardly be said of the tetra vaccine made at Athens, which had produced extremely strong reactions.

The CHAIRMAN asked for further particulars regarding the system of control which was organised for vaccinations.

Dr. WROCZYNSKI replied that he had instituted vaccination registers in which all persons vaccinated were inscribed, together with particulars as to age, sex and date of vaccination. These registers were deposited in the Health Bureaux in the two Prefectures of Thrace and Macedonia, and there was reason to hope that his instructions would be observed.

In reply to a question by Dr. Lutrario, Dr. WROCZYNSKI said that the first injection given amounted to 0.5 cubic centimetres, and the second to 1 cubic centimetre. They had only vaccinated persons between six and sixty years of age. The dose had been reduced by a quarter for persons between the ages of 6 and 10.

Dr. RAJCHMAN stated that the proportion of germs injected was respectively 2 milliard cholera germs, 750 million typhoid bacilli and 250 million bacilli for each para-typhoid inoculation.

Sir George BUCHANAN asked if Dr. Wroczynski had observed whether starvation had had any effect on the results of typhoid vaccination.

Dr. WROCZYNSKI had not observed any violent reaction among the persons vaccinated; these had been, moreover, in a condition of moderately good nutrition, and had been by no means starving.

He also said, in reply to Sir George Buchanan, that he had vaccinated both the refugees and the rest of the civil population in all localities in which cases of smallpox had been notified.

Dr. RAJCHMAN remarked that, in reply to a question put by Colonel Gauthier representing the Epidemic Commission for the whole of Greece, he had thought it advisable to give a negative answer as regarded the vaccination of the entire population, seeing that they had been only bound to vaccinate refugees and that the work of vaccinating the entire population would have been far too heavy. Further, a financial statement would be made at the next meeting enabling the members of the Committee to note the relative insignificance of the sums placed at their disposal in comparison with the magnificent results obtained.

In reply to a question by the Chairman, Dr. RAJCHMAN stated that he had received a request from the Greek Government, which would be found in an appendix to his report, in a letter from M. Christomanos, Minister of Health.

Dr. WROCZYNSKI, in reply to a question from Sir George Buchanan, said that only a very few of the refugees in the Thracian towns had not yet been vaccinated. It had been possible to reach all the principal centres, but not to vaccinate all refugees living in the depths of the country in Thrace and Macedonia, as the roads were impassable in the spring. However, they had undertaken and almost concluded the vaccination of the whole country population in the district of Gumuldjina, that was to say the British Red Cross area. At the moment, the roads had become passable again and many vaccinations had been carried out in the country.

Dr. RAJCHMAN said that the number of refugees who had been vaccinated might be estimated at 607,000 at the time when he had drawn up his report, five weeks previously.

The work done had in the past month been intensive, and it was to be desired that a total estimate of the work done should be made as soon as possible. There were serious difficulties in the way of reaching the islands of Old Greece; Dr. Haigh had made a tour of all the islands beginning at Corfu; a report had been received at Geneva some 10 days previously, but this did not refer to the inhabitants of the more inaccessible places.

Dr. WROCZYNSKI, in reply to the Chairman, stated that the Greek laboratory produced 30,000 smallpox vaccines per diem and that this was the maximum that they could look for. He did not believe it possible for vaccination to be successful if it remained exclusively in the hands of the Greek Government.

In reply to a question from Sir George Buchanan, Dr. RAJCHMAN said that, on the basis of the information which he had received, the situation might be summed up as follows : They had gone to Greece in answer to an application from the Greek Government. The representatives of the League of Nations had taken action upon a request from the Greek Ministry of Health. A Greek Vaccination Committee had been set up, and Colonel Gauthier had been appointed Secretary. The medical staffs of the Epidemic Commission were, accordingly, in principle under the Greek Government. Further, it had been decided that a fixed proportion of the salaries of these staffs should be paid by the Greek Government.

Dr. WROCZYNSKI gave further particulars regarding the Greek Government's undertakings and the manner in which it had carried them out.

It was to be apprehended that, if the Epidemic Commission were withdrawn, the vaccination campaign would be discontinued.

Dr. RAJCHMAN explained that a distinction must be made between the vaccine lymph and the tetra vaccine. The Athens establishment was at present able to supply 30,000 doses a day of the lymph ; moreover, the organisation had been supplied with vaccine pulp from Paris and Vienna ; the lymph was largely employed at the moment ; 30,000 doses had been sent from Vienna.

As regarded the bacterial vaccine, there was fortunately in Greece a laboratory for this purpose in addition to the Pasteur Institute at Athens, which were under the direction of Dr. Blanc ; these establishments, it appeared, could produce an adequate supply of vaccine.

Their funds, unhappily, were inadequate and would not enable the present organisation to carry on its work after the end of September.

It was probably Col. Gauthier's intention to finish the work of general vaccination and to concentrate all efforts upon anti-dysentery vaccination.

As regarded buccal vaccination, this had been undertaken by the Greek authorities on their own responsibility. Colonel Gauthier would note the results and report them to the Health Committee.

In conformity with the instructions given in January by the Health Committee, Dr. Rajchman had formally refused to supply vaccine for this experiment ; the vaccine had been prepared by Professor Calmette, who had got into touch with Dr. Blanc.

In reply to a question by Sir George Buchanan regarding the reactions of the dysentery vaccine, he said that no start had yet been made with vaccinations of this nature. They would begin by operating with the sexta vaccine, but it appeared that no supplies of this had as yet arrived in Greece.

In reply to a question from Sir George Buchanan with regard to the work of the British Red Cross, Dr. WROCZYNSKI said that there were 100 beds in the hospital at Drama and 50 beds in the hospital at Palazli, and a hospital had been opened at Salonika. The Palazli hospital was the hospital which had been organised by the British Red Cross and had been previously under the direction of Dr. Nansen's mission. It had been maintained by funds from Lady Rumbold (Lady Rumbold's Hospital).

In reply to another question, he said that, whereas the campaign against typhus had been attended with good results in New Greece, the results in Old Greece had been less satisfactory. As regarded malaria, there was only a very small quantity of quinine available, and this medicine was extremely expensive.

Dr. LUTRARIO drew attention to the remarkable effects obtained from an alkaloid of quinine which involved no complications, namely, cinchonine. This was an alkaloid made from the bark of the cinchona tree, which was sometimes employed in conjunction with quinine in a ratio of 25 per cent.

The American cinchona tree contained large quantities of this substance, whilst the Java bark contained large quantities of quinine and relatively little cinchonine.

In reply to a question from Dr. Chodzko, Dr. WROCZYNSKI stated that the American Red Cross had installed several mobile shower-baths for delousing purposes. The Epidemic Commission had brought with them some 30 apparatus of a very practical nature. What, however, was lacking was water and an experienced staff.

Sir George BUCHANAN expressed surprise at the high percentage of successful vaccinations, as smallpox existed in an endemic condition in Asia Minor.

Dr. WROCZYNSKI mentioned the case of a man who had had smallpox but from whose vaccination positive results had nevertheless been obtained.

Dr. LUTRARIO said that in the case of a professor of high standing in his country vaccination had always had a positive result, whilst in other cases the result had been negative, although vaccination had first been given in infancy.

Dr. WROCZYNSKI, in reply to Dr. Chagas, said that the mortality from smallpox at Salonika amounted to about 15 per cent.

Sir George BUCHANAN asked whether the refugees appeared likely to be assimilated rapidly by the rest of the population and to be able to obtain adequate means of livelihood.

Further, must fresh outbreaks be anticipated at the beginning of the following winter ?

Dr. WROCZYNSKI, taking as a basis the position in Thrace and Macedonia, stated by way of example that there were 85,000 refugees at Salonika in receipt of bread from various organisations.

The American Red Cross would withdraw from Greece in June. The Governor had made an enquiry as to how many persons would still require support and had arrived at an approximate figure not exceeding 25,000. This proved that the refugee population, which was mainly composed of small traders who had built small shops, was absorbed fairly rapidly and was able to find an occupation.

As regarded health, it was certain that the most serious question was that of housing and that the large number of lung affections which had been notified was due, at any rate in part, to the deplorable housing conditions.

Typhus had not yet appeared, at any rate in Thrace and Macedonia, but, should it break out in the following winter, an epidemic on a large scale might be feared.

As regarded the final settlement of the refugees, a very large number of them were agriculturalists, and these would have to be settled in the country.

There was a colonisation bureau in each of the capitals of Thrace and Macedonia. The difficulty was not so much that of building the necessary houses as of supplying the refugees with the essential resources for carrying on agriculture.

It should be noted in this connection that Colonel Treloar, who was under the orders of Colonel Procter, Dr. Nansen's collaborator, had thought it preferable to set the refugees to work instead of establishing a purely philanthropic organisation. For this purpose he had created a labour bureau at Gumuldjina which had found work for 600 persons; he had founded an embroidery and a carpet-making workshop and found work for a certain number of men in the forests in the charcoal industry.

He had further set up eight centres or villages for refugees, whom he had established under canvas in the country; he had supplied these people with seed and placed land at their disposal.

This was an excellent idea. Unfortunately, this mission would leave Greece in July, and it was almost certain that after its departure all these refugees would return to the towns.

Finally Dr. Wroczyński laid on the table a copy of a Salonika newspaper containing an article in favour of compulsory vaccination; a number of similar articles had been published, and a delegation had been sent asking for compulsory vaccination.

The CHAIRMAN warmly thanked Dr. Wroczyński for his extremely interesting statement. He again congratulated him, on behalf of the Committee, for the good results obtained under his direction.

FOURTH MEETING

held at Paris on Saturday, June 2nd, 1923, at 10 a.m.

Dr. Josephus Jitta, Delegate of the Dutch Government, was present.
Professor Léon Bernard was unable to attend.

18. Dutch Proposal regarding the Examination of Vessels in Port.

The CHAIRMAN read a letter from the Dutch Minister regarding the examination of vessels in port, the Secretary-General's reply and the notification of Dr. Jitta's appointment as an expert to deal with this question in the Health Committee (Annex 7). He thanked Dr. Jitta for coming.

Dr. JITTA stated that, under a Royal Decree dated March 8th, 1922, the Ministry of Labour and Public Health was authorised to exempt vessels coming from one port from any health formalities before entering another port, provided that all necessary measures of disinfection, deratisation, etc., had been taken at the first port. This was what took place when, for example, a vessel sailing from Rotterdam entered the port of Amsterdam.

The Dutch Government thought that, from an international point of view, it would be highly desirable to extend the scope of this measure in the interests of commerce.

On the other hand, the Dutch Government was faced by an insuperable difficulty, as it was impossible to admit to free circulation a vessel coming from a foreign port, even if all the necessary measures had been taken, unless absolute reliance could be placed on the manner in which these measures had been carried out. The Dutch Government was not in a position to lay down that any given port was sufficiently well equipped to justify exemption from health formalities in Dutch ports.

In view of the desirability of arriving at a general settlement of the question, the Dutch Government would be glad if the League of Nations could, after examination, give a list of the foreign ports which were sufficiently well equipped to justify the Dutch Government in admitting vessels from those ports to free circulation.

It would, of course, be essential, in all cases, to ascertain that nothing untoward should have taken place on board during the voyage from one port to the other; the vessel should be free of infection when it sailed, and it should still be free of infection when it arrived in port.

The Dutch Government merely wished that a vessel sailing from an infected port should, if it had been admitted to free circulation at a port of call, be permitted thereafter to enter a third port without health inspection, unless any suspected case of disease had occurred during the last portion of the voyage.

Sir George BUCHANAN pointed out that in certain ports, though the disinfection, deratiation and other apparatus might be equal to all requirements, the staff responsible for using these appliances might not possess the indispensable technical qualifications or might not be an efficient staff in practice. The classification of ports should therefore not be based solely on their sanitary equipment.

The Committee had also to consider whether the proposed classification was to be permanent or whether it would have to be periodically revised.

Dr. JITTA replied that it was undeniable that the equipment of a port, vital consideration though it was, was not the only matter to be taken into account. They had also to consider the personnel by which that equipment was to be used and to ensure the efficacy of the measures provided for.

Secondly, they would have to satisfy themselves that measures which were regarded as effective at a given time were still effective at a later period or after a change in the administration.

Periodical inspections, which might be held annually, or even at longer intervals, would therefore be necessary if they were to be sure that the proper steps were always being taken.

Sir George BUCHANAN asked whether any other Governments would be willing to agree to the ports being classified by the League of Nations in the manner which had been suggested.

Dr. JITTA replied that, as far as he knew, the Dutch Government had made its proposals to the League of Nations only ; moreover, the success of those proposals might be furthered by the fact that other Governments had not been previously consulted.

Dr. RAJCHMAN pointed out that if the Health Committee undertook the work they were discussing, the last question raised by Sir George Buchanan, which was of a diplomatic character, might be dealt with by the Secretary-General.

Dr. LUTRARIO emphasised the importance of the question raised by the Dutch Government both from the commercial and from the health point of view. He observed that he had had an opportunity of pointing out that vessels which had been subjected to effective measures at their ports of origin had every prospect of reaching their ports of destination in a perfect sanitary condition.

Similar measures to those which had been referred to were taken in Italian ports ; vessels which had been subjected to health measures in recognised ports were not required to undergo further measures in the next Italian port at which they called.

The difficulty was to know which ports were satisfactorily equipped from a health standpoint ; as Sir George Buchanan had observed, they must consider in that connection not only the equipment, but also the personnel which used it, and how the system worked.

It might be desirable to appoint a Sub-Committee to visit the various ports and investigate these questions ; in that case they could obtain some guarantee as to the health measures taken at ports of origin.

Dr. LUTRARIO said he was glad the question had some prospect of finding a practical solution in regard to the steps to be taken at ports of origin ; these measures were always of greater value than any which might be taken at ports of arrival.

Dr. JITTA thanked Dr. Lutrario for supporting his Government's proposal ; he quite realised the difficulties which that proposal involved.

He asked whether the authority conferred by the Convention of 1912 on neighbouring countries to conclude conventions — an authority which had been exercised by France and Italy and by Spain and Portugal — could not be extended to countries which were not neighbours.

Dr. CHAGAS said that the question was of the highest importance to the South American countries.

He thought that the best solution would be to create a staff of international health inspectors with the necessary authority to inspect vessels during their voyages. Such a measure would be calculated to provide great assistance to trade.

There was no doubt that a vessel could become infected during its stay in port ; but no health measures were taken on its departure, for, though every country took great care to protect itself, it was not interested in the protection of other countries.

He added that he had organised, for Brazilian vessels, a staff of health inspectors, who remained on board the vessels so that the latter could be admitted to free circulation in all Brazilian ports.

Dr. CUMMING said that the United States had special health inspectors to deal with ports.

The question before the Committee was generally recognised as important. It was not only a question of material but also of personnel, and, most of all perhaps, a question of the honesty of Governments in allowing or suppressing the publication of certain reports.

Until some means could be found of giving guarantees on this point, the United States Government would prefer to take the necessary measures for itself. It would, however, be very glad if an international commission would visit the health stations in American ports.

In order to avoid delay and to facilitate matters, the United States Government had detailed medical officers in its consulates to see that the proper measures were carried out

on the departure of vessels. The British Government had sent two medical officers to the United States in the previous year, and Sir George Buchanan had perhaps seen their reports.

Sir George BUCHANAN said that if the International Sanitary Convention were revised in the near future by a Conference, it might be possible to get the Governments of a certain number of countries to agree to a system by which an official list of first-class ports in those countries could be issued ; these ports would be specially inspected by the central health authorities of the countries concerned, who would be authorised to issue certificates to comply with the Dutch requirements. This would have to be laid down very clearly, however, in the revised text of the International Sanitary Convention.

A further step in the same direction might be to obtain some kind of mutual international guarantee which could be given after inspection by a central staff in which they had perfect confidence ; he expressed no opinion on this method, but it was obviously a method which deserved full consideration. It would be one way of securing certificates which would show that deratisation and disinfection had been satisfactorily carried out, and need not be repeated unless cases of infectious diseases should have occurred during the voyage.

The recent visit of British medical officers to the United States had been highly instructive and had shown the efficiency of many of the measures taken by the United States Government. Such visits and exchanges of views between medical officers of countries in close trade relations were, moreover, in complete conformity with the spirit and the letter of the Sanitary Conventions.

It was highly important that the principle underlying the Dutch proposal for inspection by the League should be considered in its application to the proposals to revise the International Sanitary Convention. It was a complex question, however, and the Committee might answer now that it was willing to take the action referred to if instructed to do so by the various Governments and by the League of Nations, but that it could not undertake to examine the question on its own initiative. In any case, before arriving at a final decision, it would be well to consult the Office international d'hygiène publique, the Permanent Committee of which included several of the representatives of the countries concerned.

Dr. RAJCHMAN pointed out that the Dutch Government had asked the Secretary-General whether the question was within the province of the Health Committee of the League of Nations. On receiving an affirmative reply, the Dutch Government had officially laid the matter before the Health Committee through the Secretary-General.

The Committee was quite free to decide whether or not it thought it desirable to consider the question.

If its decision were favourable, it might carry out its investigation in either of two ways : by appointing a Sub-Committee to make more detailed technical enquiries or by first informing the Council of the outline of the proposed agreement and emphasising the necessity of an investigation in the ports. This investigation would be carried out with the consent of the Governments concerned, which the Council could approach.

He pointed out that they had a precedent in the fact that a Committee of Enquiry had been sent to the Far East.

With regard to the intervention of the Committee of the Office international d'hygiène publique, it should be remembered that if it were desired to ask its view before undertaking the examination of the problem the matter could not be brought before this body until October, so that the examination of the question would be delayed by perhaps six months.

Moreover, the Secretary-General's view was that the Health Committee was competent to deal with the matter ; it was therefore for the Committee to decide whether it proposed to refrain from taking the question up and to consult the Office international.

In any case there seemed no reason why the necessary preliminary work should not be undertaken at once.

Moreover, there was no doubt that when they came to putting forward definite proposals for the drafting of a new Convention or the revision of the existing Convention, the Health Committee would communicate with the Office international.

The only question which arose immediately was whether the Health Committee regarded itself as competent in the matter and what was the best procedure to employ.

If the Health Committee undertook to consider the question, it could easily embody its acceptance in a resolution, and could, if it thought fit, appoint a special Sub-Committee, and could request the Council to communicate with the various Governments concerned with a view to the institution of an enquiry.

Dr. JITA, referring to Dr. Cumming's remarks, thought that a *modus vivendi* might be found in the conditions suggested by Sir George Buchanan.

The Netherlands Government had already classified the ports in the Dutch Indies in four categories. First-class ports had all the necessary equipment, together with a laboratory a health officer, etc. ; second-class ports had all the equipment but no laboratory ; third-class ports had a health officer but no equipment ; fourth-class ports had only a consular agent, and were visited from time to time by a health officer.

It would be seen that the first-class ports satisfied the conditions laid down in the Dutch Government's proposal.

Dr. Cumming had referred to the American health officers in foreign ports. There was an American medical officer in Rotterdam, but he did not concern himself with disinfection ; he chiefly examined emigrants to the United States.

With regard to the Office international d'hygiène publique, this body could certainly consider the question and suggest what measures it thought should be inserted in an international convention. In the case in question, however, they were mainly concerned with practical

measures. It was for that reason that the Dutch Government had approached the League of Nations. It had, perhaps, somewhat anticipated the connection which would soon exist between the League of Nations and the Office international. In any case, the Health Organisation of the League would seem to be the qualified body to deal with practical measures.

The CHAIRMAN thanked the Netherlands Government for its important proposal. He suggested that the question should be examined by a Sub-Committee consisting of Sir George Buchanan, Dr. Cumming, Dr. Chagas and Dr. Lutrario.

Sir George BUCHANAN said he was willing to act as a member of the Sub-Committee if it were understood that the work of the Sub-Committee would be confined to submitting a report, and that it would not be empowered to arrange for inspections in ports.

The CHAIRMAN said that that was so.

Dr. CARRIÈRE thought that, as the question had been laid before the Health Committee by the Dutch Government through the Secretary-General of the League of Nations, the Committee could not refuse to consider it. The Office international d'hygiène publique could not, however, be ignored. He thought the Office international should be informed of any decisions at which the Health Committee might arrive on the subject, as it was the Office international which would later be called upon to codify those decisions in an international convention.

The CHAIRMAN replied that the Committee was certainly in agreement on this point.

The Committee decided to appoint a Sub-Committee consisting of Sir George Buchanan, Dr. Cumming (Chairman), Dr. Chagas and Dr. Lutrario.

19. Report concerning the Interchange of Public Health Personnel.

In the absence of M. Velghe, Dr. Rajchman addressed the Committee.

(a) *Visit to the United States.*

Dr. RAJCHMAN said that he had been able to obtain the views of M. Velghe before the latter's illness and to examine the notes which he had prepared for his report.

It had been decided at the last session that a visit should, if possible, be organised to the United States. Dr. Cumming had been good enough to take charge of the matter and would say that he was willing to give his assistance, and that the United States Government had approved the scheme.

As to the financial side, the Committee had in hand about 35,000 dollars. With this sum it could arrange a visit to America for some twenty public health officers.

If it took twenty-one public health officers with a daily allowance of $7\frac{1}{2}$ dollars for a period of 100 days, the expenses would amount to 16,000 dollars, to which must be added 8,000 dollars for the voyage. If they added 10 % to 12 % for travelling expenses in the United States, and miscellaneous charges, the total expenditure would amount to 27,000 or 28,000 dollars.

With regard to the scheme for visits to the United States, Dr. Cumming proposed to arrange it in detail on his return. But after discussion with him and his assistants, he could give an outline of the plan, which would be somewhat as follows :

The experience of the early visits showed that, in the first place, the public health officers must be very carefully selected. Moreover, each of these officers was naturally specially interested in a particular subject. It would be desirable to allow them ten days or a fortnight at the end of their stay in America to enable them to study their special subjects individually.

In those circumstances, the public health officers would stay for a fortnight in Washington and would then take a course in a northern State and in a southern State ; they would subsequently spend some time in a large town, then in a small town, and lastly — and this was important — in a rural district. They might spend 12 days in a northern State, 12 days in a southern State, 12 days in a large town, 12 days in a small town, 20 days in a rural district and, on their return, 5 days at Washington for a conference and subsequent discussion. That would leave them 12 days for individual visits in connection with their special subjects.

The medical officers might be divided into seven groups, each consisting of three members, as had been done in Great Britain.

Dr. Cumming, Surgeon-General of the United States public health service, had pointed out that, in order to save travelling expenses, the travelling might all be concentrated on the Atlantic coast, where they could visit all the medical establishments. The State of Virginia would offer an ideal field for experiment.

The date of this visit should be fixed during the present session of the Committee.

Dr. Cumming and his assistants had suggested that it was desirable that the visit should begin in September so that they might have information as to the progress of the anti-malarial campaign.

If the Health Committee approved the scheme, the Secretariat would communicate during the following week with the public health departments of all countries, as the medical officers would have to be very carefully selected, and it was not always easy to find medical officers with an adequate knowledge of the languages of the country which they were invited to visit.

Sir George BUCHANAN thanked Dr. Cumming for this proposal, which enabled the visit to take place to the United States. He had no doubt that the arrangements made by the United States Government for this visit would be excellent.

The same difficulty, however, arose as had previously arisen in regard to the selection of medical officers to be sent, owing to the unduly short notice which had been given. It was a matter of capital importance. They must have at least six months' notice. The majority of the British public health officers had already made arrangements for their leave, and they would find it very difficult to obtain an additional 100 days.

Dr. RAJCHMAN replied that he had himself in his report emphasised the necessity of giving longer notice. He hoped that at that session they would be able to determine the general lines of the programme for 1924.

Dr. CUMMING said he was delighted that the next visit should take place to the United States. Their public health system was not, of course, so perfect as the systems in Belgium or Great Britain; but for that very reason the officers taking part in the visit would be able to study public health organisation in all its stages of development. They might also study emigration and quarantine measures in the United States and the methods employed against malaria.

He would like the whole Health Committee to visit the United States and give the American public health officers the advantage of their experience and their ideas.

The CHAIRMAN thanked Dr. Cumming on behalf of the Committee for the scheme which he had drawn up and for his kind invitation to the members of the Committee.

The Medical Director's conclusions regarding the visit to the United States were adopted.

(b) *Interchange Programme for 1924.*

Dr. RAJCHMAN explained the programme for 1924.

The first place, he said, would have to be reserved for any proposals that Dr. Norman White might make after his travels in the Far East.

A sum of 10,000 or 15,000 dollars might have to be set aside for an interchange to the Far East. No interchange had as yet been carried out in that part of the world. It was hoped that public health officers from South America would take part in the visit to the United States.

Three interchanges might be contemplated for 1924.

In the first place, if Sir George Buchanan agreed, they might have one in Great Britain, and this would be arranged in the manner suggested in Sir George Buchanan's report and in Dr. Rajchman's own. M. Velghe also hoped that this would be done. The interchange in Great Britain might last for three months.

For the second general interchange, the Committee had received from Dr. Jitta an invitation to go to the Netherlands. The scheme for this visit had been circulated a few weeks previously. As the Netherlands was a small country, they might make an exception to the general rule and make one visit to the three Scandinavian countries. The time taken would be 3½ months in all.

For the third general interchange, they could choose between two suggestions: either an interchange in one of the so-called "new" countries of Europe, which might be extremely interesting, or in Switzerland, if Dr. Carrière would be kind enough to issue a formal invitation.

There would thus be three collective interchanges, subject to the possibility of a fourth in the Far East.

It would also be well to arrange for collective courses of specialists for next year.

Two such visits of specialists were taking place this year: a visit of malaria specialists to Italy and an interchange, now in preparation, between the staffs of bacteriological laboratories. In certain cases it would be possible to carry out an actual mutual exchange, as, for example, between the assistants in the Washington Bacteriological Laboratory and those in Prof. Madsen's Institute, or between the Hamburg Institute of Tropical Medicine and one of the American institutes.

These, however, were only individual interchanges. A new system might be tried next year. They might take a group of health specialists, such as specialists in school hygiene and specialists in tuberculosis in its relation to public health and send them to visit a number of countries in succession. Perhaps some of these specialists could submit a comparative report on the organisation of their specialities in the various countries. A sum of 7,000 to 10,000 dollars might be set aside for individual grants or research travel.

Sir George BUCHANAN said he had not yet had an opportunity of submitting his report to the Committee. He was glad that certain points, such as the question of specialist courses, had already been dealt with by Dr. Rajchman. He had gathered that the majority of the public health officials who had taken part in the recent visit to England would probably have preferred to have specialist courses.

With regard to the length of the courses, six weeks seemed enough. It had been suggested that this time was too short; that the persons taking part in the courses became overburdened with work and unable to assimilate everything they saw. As a result of experience in Great Britain, he thought it would now be possible so to arrange the course, without making it longer, that these difficulties would not arise.

On the other hand, Dr. Rajchman's proposal for an interchange of health personnel in the Netherlands followed by the Scandinavian countries was vitiated by the old errors which they had been endeavouring to avoid. Medical officers who had steeped themselves in the atmosphere of a country and its public health activities were to be forced immediately to go on to other countries where they would receive different impressions, and this would result in confusion and mental fatigue. The truth of this statement had been recognised by all the persons who had taken part.

Dr. JITTA thanked the Committee for having taken into favourable consideration the proposal for a visit to the Netherlands. The Dutch Government would be glad to receive foreign medical officers.

Dr. Jitta further stated that he had received a large number of acceptances in his own country for lectures on hygiene properly so-called and on specialised branches of hygiene. The number of replies he had received from Dutch professors regarding the possibility of arranging courses in their laboratories was also satisfactory. He had for a time been afraid that his country was too small for it to be possible to arrange the course. It would be too small for a three months' course, but they could certainly provide the public health officers with useful work for a month or six weeks.

Should the Committee decide to arrange an interchange in the Netherlands, he would be ready to assist the Committee in any way in arranging the courses as it thought fit.

A course in the Netherlands would be of special interest owing to the existence at Amsterdam and Leyden of Colonial Institutes at which the public health officers could acquire some ideas of colonial hygiene as practised in the Netherlands.

The CHAIRMAN thanked Dr. Jitta for his communication.

FIFTH MEETING

held at Paris on Monday, June 4th, 1923, at 10 a.m.

20. Continuation of the Discussion on the Report on Interchange of Public Health Personnel.

(a) *The Programme for Interchanges in 1924 (continuation).*

Dr. CARRIÈRE said that he would like to confirm what Dr. Rajchman had said at the last meeting with regard to Switzerland. That country desired to begin by an interchange with other countries. The question of the proposed European interchange would be laid before the Conference of the Cantonal Health Directors which would meet at the end of June.

It would also be desirable that an interchange should be made for a visit to Switzerland. Conditions in Switzerland were somewhat peculiar as a result of the decentralisation of her Health Services. This very circumstance, however, would allow those participating to examine an organisation such as existed nowhere else.

Dr. Carrière was glad to note that practical experience of visits justified his anticipations with regard to this matter, namely, that it was preferable to make full use of the advantages offered by any one country instead of dividing attention between two different countries. As for the duration of the interchange period, he did not know whether there was enough material in Switzerland to justify a period of three months. A shorter period might be preferable.

In reply to a question by Dr. Rajchman, Dr. Carrière stated that Switzerland did not intend to take part in the proposed visit to the United States, but that she would doubtless be prepared to take part in the visit which was to take place to the Netherlands.

M. KUSAMA pointed out that there were two methods: one applied in Belgium, which consisted in showing everything there was to be seen, and the other which would appear to be desired by the health personnel, and which allowed each specialist to study his own speciality within the limits of the general scheme. In England the results of the group system had been satisfactory.

In respect of visits to the Far East, as soon as Dr. Norman White had been able to give an account of the results of his mission, the Japanese Government would be very happy to co-operate with other Governments and to assist such a visit by all means in its power.

Dr. CHAGAS made a tentative suggestion for a joint system of interchange with South American countries. Such interchange would be particularly useful for European countries possessing colonies in tropical countries, since in South America there were special health organisations dealing with tropical diseases.

Dr. CHODZKO thought that, in considering the duration of visits, special cases must be taken into account. For instance, in the United States it would be impossible to carry out a complete enquiry in six weeks.

Speaking of the confusion which might result in practice from an interchange with several successive countries, he said that a further distinction must be made. The difficulty would not arise if countries of the same type were grouped together, for instance, the Netherlands, Denmark, and doubtless Norway and Sweden, which had a communal type of health organisation, or on the other hand countries like Czechoslovakia, Poland, and the Kingdom of the Serbs, Croats and Slovenes, which had a centralised health régime.

With regard to specialisation, it was right that a certain amount of latitude should be left to those taking part in a visit, in order that they might devote part of their time to those studies in which they were particularly interested.

The CHAIRMAN agreed that it was desirable that in individual cases circumstances should be taken into account. For instance, in the case of Scandinavian countries, the conditions were such as to make a proper period of study impossible. It would, however, be desirable, should there be no period of study in collaboration with doctors, to show those taking part in the visit the various local institutions and the methods used there. Such a visit might last two or three weeks and be combined with a visit to another country.

Dr. LUTRARIO was very glad to see the progress which had been made in the interchange system, contrary to any fears that had been expressed. Great caution was necessary in respect of individual grants for purposes of research. Such grants involved larger expenditure than collective courses, and administrations were not called upon to give so large a measure of assistance. The holders of such grants generally derived more benefit from them than did the administration. In Italy where individual grants for the purpose of the study of tuberculosis existed, certain guarantees were insisted on. To begin with, the holders of the grants were chosen by very rigorous selection. Then the holder signed a document which imposed certain obligations on him. The grant was made in two successive payments. Lastly, the holder of the grant was obliged to submit a report at the end of his period of study.

(b) *Consideration of Sir George Buchanan's Report on the interchange visit to England.*

Sir George BUCHANAN read and commented on his report (International Interchange of Health Personnel. Visit to England of Officials of the Public Health Service. Annex 8).

It would be seen, when considering the report as a whole, that the interchange visit to England had been very profitable, not only for the visitors, but also for those who had received them. The value of such courses was thus clearly shown, and the Society of Medical Officers of Health in England was quite prepared to repeat the experiment.

As for the duration of the courses in Great Britain, if they were repeated, Sir George Buchanan did not think that it was advisable to extend them to three months. According to what had been said by the officials responsible for organising it, a duration of from six to seven weeks would be sufficient, provided that work could be rather more concentrated. They had learnt by experience some points on which time could be saved. Those taking part should be allowed one or two days each week to sort their documents and rest, and need visit only one establishment of any particular type, instead of visiting several.

With regard to the programme for the next year, it would be advisable for it to be communicated to the various organisations concerned towards the end of the present summer, so that they might know what countries were to be visited, and the date and the duration of the interchange visit, and be able to choose their candidates by rigorous selection which was an important point in these interchange visits.

The autumn would, he believed, be the best time for another interchange visit to England next year, but he would consult the medical officers of health as to this.

The CHAIRMAN thanked Sir George Buchanan for his clear and full report and expressed the gratitude of the Committee to the English Health Authorities for the work that they had carried out in preparing this interchange visit. The Chairman himself had been present at the first meetings in London and had, therefore, been able personally to appreciate the great kindness of the English Health Authorities.

Everyone agreed that England was the country in which young medical men would derive the greatest profit from a period of study.

(c) *Approval of the Interchange Programme for 1924.*

Dr. RAJCHMAN said that three essential points must be considered: the duration of the interchange visits, the selection of the medical officers, and the choice of the countries.

With regard to the duration of the interchange visits, it had been recognised that it would be very difficult to adopt a uniform period.

In this matter a distinction must be made in the case of countries of a large territorial extent such as Great Britain. In such countries six weeks would appear to be an altogether inadequate period. The first interchange visit had been really more an inspection than a real period of study. A final proposal could only be made after further experience, but he thought that at present the period of study should be longer than six weeks; the necessity for such a period of study had been recognised by all the members of the Committee and more particularly by Dr. Lutrario.

Only two examples of a real period of study could be given, that of the Italian medical officers in Poland and that of a Belgian inspector in the Netherlands. The results obtained had been excellent. In the other cases it would appear that the visits of inspection, which had been carried out in the provinces sometimes, had done little more than duplicate what had been done in the capital. It would therefore probably be necessary to provide for a period of from 9 to 13 weeks. On the other hand, too great account should not be taken of complaints from the medical officers with regard to fatigue. Those who had complained, had not been prepared for the interchange visit and had not been able to study the documents beforehand. Real difficulties had arisen from the insufficient knowledge of the language of the country in which the period of study was passed. Six months' previous notice would still be insufficient to allow of the learning of the language, particularly as it was proposed to make medical officers of 27 different nationalities participate in this work. This would be a further reason for the extension of the period of six weeks, as it would be regrettable for a medical officer to leave a country at the very moment when he was beginning to derive real benefit from his stay there.

With regard to the selection of medical officers by their own administrations, the Medical Director agreed with Sir George Buchanan as to the necessity for a very careful choice. Exaggerated importance must not, however, be attached to the allegation that in the last interchange there had been too many specialists, since among the 25 medical officers who took part in the periods of study in Great Britain and in Italy there had only been six specialists. As a rule it was obvious that each specialist was inclined to devote himself more especially to the particular problem which interested him.

It was therefore indubitable that the selection should be made by the public health administrations in the most careful manner.

In respect of the choice of countries, Dr. Rajchman was glad to learn that it would be possible, to carry out an interchange visit: (1) in Great Britain; (2) in the Netherlands and Denmark, for a period of from 10 to 11 weeks; (3) in Switzerland, or one of the Central European countries.

It would be desirable that a decision should be taken, if possible that very day, with regard to these interchange visits.

The programme of the courses would be prepared in all its details with the collaboration of the National Health Organisations.

As regarded the preparation of reports by the medical officers, Dr. Rajchman said that at their general meeting at Geneva, those officers had been asked to read reports giving a comparison of the working of Health Services in Great Britain and in Austria. The result of this had been a series of documents which were extremely interesting to everyone. The only criticism that had been made was that the request for the preparation of these reports had not been made to those concerned on the very first day. As a matter of fact the request had been made on the date mentioned by Dr. Rajchman.

This might provide a source of very interesting information and suggestions.

In conclusion Dr. Rajchman associated himself with the thanks expressed by the Chairman to Sir George Buchanan and to the Health Authorities of Great Britain. He further desired to thank Dr. Lutrario, the Director-General of the Italian Public Health Service and Dr. Helly, the Chief of the Austrian Health Administration for the Organisation of Interchange Visits.

The CHAIRMAN suggested that the Committee should give its final approval to the proposals which had been laid before it in respect of the organisation of interchange visits with Great Britain and with the Netherlands and Denmark. He suggested that the Committee should leave other matters connected with this subject to the Medical Director, who would certainly take the remarks made during the session into account.

He thanked Dr. Rajchman in the name of the Committee for his most successful enterprise and expressed the hope that, thanks to the assistance of the members of the Health Committee of different nationalities, this organisation would become really international.

Dr. RAJCHMAN, in reply to a question from Sir George Buchanan, said that he hoped to be able to submit a detailed report to the Health Committee at its October session, dealing with everything that had been done up to that time towards the carrying out of the decisions that had been taken.

He could not fix an exact date, but within three or four months he would circulate the documents that had been published and the programme for collective courses of specialists for the year 1924.

The Committee agreed to this procedure.

(Item No. 6 of the Health Committee's agenda was approved together with the corresponding part of the Medical Director's report.)

21. Report by Dr. Carrière on the Progress of the Work of the Mixed Sub-Committee on Opium.

Dr. CARRIÈRE summarised his report (Annex 9), to which he added the following supplementary explanation:

He said that the Sub-Committee had been instructed to consider two points: first, the question of enquiries, secondly, the question as to what interpretation should be given to the phrase "a country's legitimate requirements of drugs". It had been decided that for this purpose only medical and therapeutical requirements should be regarded as legitimate, and all others excluded.

This interpretation had been allowed subject to reservations made by the British and Indian delegates.

The Sub-Committee had recognised that the enquiries with a view to ascertaining the requirements in narcotic drugs of various countries were meeting with serious difficulties. The Health Section had applied to a specialist in this matter, Professor Knaffl-Lenz, who had been temporarily attached to the Health Section to deal with questions of this nature.

On the other hand, Dr. Anselmino, the German Government's representative, had prepared a memorandum on this matter. This document added nothing to Dr. Carrière's report.

Dr. Knaffl-Lenz had proposed that a decision should be taken to the effect that narcotic drugs could only be supplied on the production of a document, the colour of which should vary according to the nature of the drugs. This form would be taken by the doctor from a book in which the counterfoil would remain, and handed in to the chemist, who would enter it on a special register, noting the quantity supplied.

On the other hand, in Switzerland, a method suggested by the Sub-Committee had been tried. It consisted in compiling statistics of general mortality based on the results noted by the funds for insurance against illness and on hospital figures, the average thus obtained being applied to the population as a whole. It had been decided that this method should be tried in the Canton of Basle, where two-thirds of the population were insured against illness.

Nothing final had yet been done in that respect.

Dr. Knaffl-Lenz had also prepared a memorandum with regard to the measures which should be taken with a view to stamping out the morphine and cocaine habits.

The memorandum began by suggesting that as far as possible the use of opium in therapeutics should be diminished by the substitution for it of opium substitutes which were not liable to produce chronic ailments. The preparation and therapeutic use of heroin were to be forbidden and medical students were to receive special instruction as to the undoubted dangers inherent in the use of drugs.

Attempts should also be made to educate the public. Persons addicted to the use of morphine and cocaine should be put in special wards in hospitals in addition to which dispensaries should be established similar to those which had been set up for syphilis and tuberculosis.

Dr. Knaffl-Lenz had made a certain number of proposals in respect of this matter, some of which at least should be carefully examined.

Thirdly, the Mixed Committee had been entrusted with the examination of a French proposal for the extension of the Hague Convention to new preparations. This question had been referred to it by the Advisory Committee on Opium, at which the representatives of Great Britain and India had raised objections with which all the members of the Committee were fully acquainted.

It was probable that the Mixed Committee which had been appointed to enquire into this question would be able to meet during the summer and that at the September session of the Health Committee, Dr. Carrière would be able to submit a full report, but at present he was obliged to confine himself to giving a mere summary of these various questions.

The CHAIRMAN expressed the warm thanks of the Committee to Dr. Carrière for the valuable summary which he had given them.

Dr. CARRIÈRE, in reply to Sir George Buchanan, said that the question of the use of coloured certificates for the supply of narcotic drugs was at present under consideration. They had only an experiment in view and no permanent scheme, for he was not in a position to give the details of the organisation suggested by Dr. Knaffl-Lenz. It was further indisputable that an altogether special enquiry was necessary into the measures to be taken by consultant physicians in urgent cases, should no special forms exist.

Dr. LUTRARIO pointed out that a special law against narcotic drugs (February 18th, 1923) had recently been promulgated in Italy, a law in which account had been taken of the recommendations made by the Opium Committee. It went to the length of providing for imprisonment of offenders. Regulations had been prepared and Dr. Lutrario would be very glad to circulate among his colleagues a memorandum giving a summary of this law and of these regulations.

The CHAIRMAN thanked Dr. Lutrario for this information.

Dr. CHODZKO said that the United States delegate on the Opium Committee had agreed with the opinion expressed by the Health Committee's Sub-Committee with regard to the control of narcotic drugs and of their production, and the declaration as to the legitimate requirements of a country. In these circumstances it was probable that the Opium Committee at Geneva would approve the opinion of the members of the Health Committee.

The United States had also taken measures which had been both drastic and timely, when it had been decided to suppress heroin.

Dr. Chodzko added that the Polish Parliament had passed a law in the previous April concerning the control of narcotic drugs.

The CHAIRMAN thanked Dr. Chodzko.

He also said that at that moment Denmark was carrying out an extremely thorough enquiry into the use of opium.

Dr. Carrière's report was approved.

22. Standardisation of Sera, of Serological Tests, and of Biological Products.

The CHAIRMAN stated that he had been authorised by the Committee to convene a small Conference on this question.

After having consulted Dr. Dale, who was a specialist very well acquainted with this question, he had decided that the Conference should meet at Edinburgh on July 19th.

The Chairman suggested that it would be very useful to form a small Committee of Experts composed of three or four members of undoubted experience and to ask the Health Committee for authority to appoint such a Committee later on.

Sir George BUCHANAN said that there might be disadvantages in the policy of entrusting the direction and centralisation of work, such as that proposed, to a Committee of Experts whatever their special qualifications might be. It would be preferable to entrust the direction of this work, with the responsibility it implied, to the Chairman of the Health Committee.

The CHAIRMAN replied that it would be advisable, particularly in the case of the United States, to entrust a person of recognised qualifications with the task of co-ordinating the work of the various laboratories to which it would be necessary to appeal for assistance.

In view of the late hour, he thought it preferable to postpone the rest of the discussion on this point to a later meeting.

This was agreed upon.

23. Correspondence with the Pan-American Sanitary Bureau.

Dr. RAJCHMAN explained that, as a result of the approval given by the Council to the proposals of the Health Committee, he had requested Dr. Cumming to prepare a memorandum on possible collaboration with the Pan-American Sanitary Bureau (Annex 10), and that Dr. Cumming had very kindly consented to do so.

Dr. CUMMING explained that the Pan-American Office had been more or less dormant during the war, but that it had now resumed its activities.

He gave a brief summary of Annex 10, laying great stress on the work in respect of leprosy. He drew attention to the results obtained in this matter, particularly in Colombia and Venezuela, by the use of oil of Gynocardia. He said that after the Pan-American Conference at Santiago, the representative of the Rockefeller Foundation and Assistant-Surgeon General Long, who had kept in touch with the work done there, had undertaken a journey throughout South America to establish the necessary connection between different States in respect of health questions.

Every endeavour had been made to avoid overlapping with the work undertaken by the League. There were many matters of more or less local interest to the countries of Western America (more particularly yellow fever), in which the Pan-American Office could be of considerable use. Its headquarters were at Washington, and served as a kind of clearing-house for American countries.

Sir George BUCHANAN asked whether it would not be advisable for the League of Nations to send an observer to important Conferences, such as that on leprosy, so that this observer might keep the League informed. Such a procedure was obviously desirable, particularly in cases in which such a Conference was likely to lead to an international convention.

Dr. RAJCHMAN replied that this question might be carefully discussed when the Health Committee considered the question which had been raised by a letter from the International Union against Venereal Disease.

Dr. CHAGAS thought that the Pan-American Union would provide a most valuable link between South American countries and the Health Committee.

He said that an international conference on the subject of leprosy had met in Brazil and that in Brazil there was a special law and special establishments for the purpose of combating that disease.

Dr. Chagas would have much pleasure in supplying his colleagues with any information on this point likely to be of interest to them.

Sir George BUCHANAN asked that such information should also be communicated to the members of the International Office of Public Health.

The CHAIRMAN thanked Dr. Chagas and Dr. Cumming for the information which they had supplied.

He was very glad to learn that Dr. Cumming was collaborating with the Health Committee and the International Office of Public Health.

Dr. CUMMING said that he accepted with pleasure the task of providing the liaison in question, and that he would have the most valuable assistance of Dr. Chagas, who was also a member of the Pan-American Office.

24. World's Dairy Congress at Washington, October 1923.

Dr. RAJCHMAN reminded the Committee that the Council had taken the following decision :

“ (1) That the Secretary-General be authorised to convey to States Members of the League of Nations such information as may seem useful in connection with the Conference.

“ (2) That the Health Committee be requested to give the Conference such co-operation as it may find practicable in all technical matters within its competence. ”

He said that the organisers of this Congress desired that its programme should be communicated by the Health Committee to all the health organisations with which it was in touch, and which might correspond with the Organising Committee with a view to being represented at this Congress.

Should the Health Committee accept the principle of providing the assistance which had been requested, perhaps Professors Calmette and Nocht might be asked to prepare a memorandum for the Congress.

Sir George BUCHANAN asked whether they could not leave it to the Chairman to take any steps in this matter that might be necessary.

Further, each member of the Committee might take note of the desire expressed by the organisers of the Congress, with a view to communicating it to experts who might, if necessary, prepare a report and transmit it to Washington.

Dr. RAJCHMAN suggested that the usual procedure adopted by the League of Nations might well be followed in this case, namely, that communications from the experts in question might be sent in, either to the Health Section, who would pass them to Dr. Cumming, or direct to Dr. Cumming.

This proposal was adopted and Dr. Cumming accepted the duties entrusted to him.

25. Second Oriental Red Cross Conference in Manila.

A letter from the General Director of the League of Red Cross Societies to the Secretary-General was read (Annex 11).

The Health Committee decided to express its thanks to the General Director of the League of Red Cross Societies for his invitation. The Committee considered that it would be desirable that one of its members should, if possible, represent it at the Manila Congress, but it expressed its regret at being unable, as things stood, to give a definite answer in regard to this matter.

26. Meeting of the Sub-Committee entrusted with the Task of studying the Question raised by the Dutch Government with regard to the Quarantine Clearance (« libre pratique ») of Ships.

The CHAIRMAN asked whether, in view of the fact that Dr. Cumming had to leave Paris that evening, it would be possible for the members of the Sub-Committee, which had recently been appointed, to hold a meeting.

Sir George BUCHANAN suggested that it might simplify the work if he prepared some notes which he would circulate to his colleagues for them to complete if necessary. Should they be able to come to an agreement by proceeding in that manner, a report might be prepared for the next session. Should such not be the case, the question might be considered by a Sub-Committee at the next session.

The CHAIRMAN said that communications between the members of the Sub-Committee should pass through the Geneva office.

Sir George BUCHANAN thought that this procedure would be liable to delay the solution, and that it would involve too many complications.

Dr. RAJCHMAN thought that in this case it would be preferable to follow the previous practice.

He thought that, before the meeting of the Committee, members of the Sub-Committee might have a short meeting, during which they could appoint their Chairman. Either Dr. Rajchman or one of his collaborators could act as Secretary. This would be preferable, for legal or other questions might be raised during the work of the Sub-Committee which would involve calling in other Sections of the Secretariat.

It was decided that the Sub-Committee should meet before the next meeting of the Committee.

SIXTH MEETING

held at Paris on Monday, June 4th, 1923, at 4 p.m.

Professor Léon Bernard was absent.

27. Preliminary Work of the Special Service of Epidemiological Intelligence and Public Health Statistics.

Sir George BUCHANAN, Rapporteur of the Sub-Committee, said that its work was not sufficiently advanced to enable a written report to be prepared. He therefore asked leave to give a verbal summary of the work of the Sub-Committee.

The Sub-Committee had begun by considering the observations on this subject which appeared in the Medical Director's report and which had been approved subject to a few modifications. The same applied to Mr. Sydenstricker's report (Annex 12). The Sub-Committee had unanimously agreed that the results so far obtained were encouraging and extremely promising. The work, however, was experimental, and if, contrary to expectations, experience showed that it did not supply the Governments concerned with all they might reasonably expect, there should be no hesitation in dropping any part of the work undertaken of which the practical utility was not clearly proved ; on the other hand, there should be no hesitancy in starting on new lines, if necessary.

The Sub-Committee had then dealt with the visits of certain officials (two had been appointed for the purpose) to different countries to obtain information with regard to the position in respect of health statistics on incidence of disease, etc. It had been agreed that, when they returned, the reports prepared by these officials should not be published or utilised without the official concurrence of the Governments or Health Departments concerned, in order to avoid complications or misunderstandings.

Owing to lack of time, the Sub-Committee had not yet been able to settle four points :

(1) The question of the views of the Committee on certain experimental bulletins which Mr. Sydenstricker had prepared. Should these three bulletins be published or not ?

(2) The action which should be taken on the proposal for a specialised enquiry in relation to cancer.

(3) What should be done with regard to the proposed malaria investigation.

(4) The proposal made by the Rockefeller Foundation with regard to interchange of statistical officers.

Dr. CUMMING said that he was very glad that the Health Committee had decided to approve the report submitted by the Medical Director and by Mr. Sydenstricker. The task was indeed a most important one.

The CHAIRMAN thanked Sir George Buchanan for his summary and called upon Mr. Sydenstricker to speak.

Mr. SYDENSTRICKER gave explanations concerning the two documents (*Epidemiological Intelligence* No. 7, in proof, and *Epidemiological Report* No. 50) which had been circulated to the Committee. The first document contained a summary of such statistics as were available on the incidence of certain diseases in European countries during 1922. Its various chapters were to be preceded by an introduction intended to explain to the reader how the statistics had been obtained and to what extent they could be considered as reliable. The document would be circulated for information to health statisticians and would enable them to estimate what information was available with regard to the diseases the notification of which was compulsory in 1922. This information would be brought up to date as circumstances arose and account would be taken of any additional observations and fresh information received.

The second document was a regular publication and contained exact information with regard to diseases the notification of which was compulsory in a certain number of countries. Such information was published as soon as possible, and the reasons for such publication had been stated at length in Mr. Sydenstricker's memorandum, which had also explained why the figures, thus published, were only relatively correct in the measure possible for such investigations.

These *Epidemiological Reports*, when first issued, dealt with countries in Eastern Europe. Then they began to include information regarding other European countries. It was hoped eventually to publish figures for something like forty countries all over the world. The figures given were not intended to be final but simply represented the information available at the moment.

Sir George BUCHANAN thought it advisable that, in the second document, the sources of the information published should be given, as the value of the figures would thereby be increased.

He said that the same applied to the annex to the first document. He thought that the latter publication would be useful. A few days ago, for instance, he himself had been immediately able to obtain information from the annex with regard to the seasonal incidence of scarlet fever in different countries of Europe.

With regard to the first principal document comparing the incidence of certain diseases in various countries on the basis of their notification figures, the question might be raised as to whether it was worth while publishing them in view of the information at present available.

It had been clearly shown that the ratios of notified diseases to population, as between the different countries, were not comparable *inter se*. In these circumstances, there might be certain disadvantages in the publishing of these statistics or charts. They invited comparison between countries on matters of which the data were not properly comparable. The public would not realise the difference between the various sources of the documents on which the statistics or diagrams were based. The same objection applied, even more strongly, to maps similar to those which had been circulated to the Health Committee. The Intelligence Service, through its new medical officers, had just begun to carry out enquiries with a view to discovering what the actual facts were about notification in different countries. It would be premature to publish comparative statements of this nature among the documents of the League of Nations before having these facts.

The CHAIRMAN agreed with what Sir George Buchanan had said with regard to the value of the reports proposed by Mr. Sydenstricker. He did not feel that he was qualified to enter into a discussion of details, for that was rather the task of the various health services which would take cognisance of the document and make suggestions for the 1923 edition. As for the disadvantages of the comparison referred to by Sir George Buchanan, the preamble ought to be made extremely clear, so that everyone should understand that it referred to an experiment. In Denmark, as in England, notification of infectious diseases seemed to indicate unsatisfactory conditions in those countries, but that was because infectious diseases were really notified there.

The only difficulty was connected with the map, since that was the most striking part of the scheme, but all the part of the document connected with the comparison of figures should not be eliminated. Even though it might be proved that the figures were not comparable, health administrations might derive valuable ideas from them. As Sir George Buchanan had said, it would be most useful to quote the sources from which the information was obtained.

Dr. LUTRARIO did not quite agree with Sir George Buchanan with regard to the maps, since they gave a general idea and immediately attracted the attention of persons desirous of following the spread of a disease; besides, there were compensations. Great Britain might appear to be in a bad position so far as scarlet fever was concerned, but Italy was not better off with regard to enteric fever. Brighter colours might perhaps be used in these diagrams. In any case, these maps had the advantage of immediately giving a general idea to those who conducted them. The statistics had been very carefully compiled. Still, he thought it might be advisable to add as much information as possible with regard to mortality. This information, compared with that regarding incidence of disease, would enable those studying it to estimate to what extent infectious diseases were or were not duly notified. Should it not be possible to obtain figures as to the mortality of the same year, figures as to the mortality of a previous year would be interesting. Such figures would give a clearer idea of conditions than merely the figures as to incidence of disease. Information as to authorities would also be of great importance.

Dr. CUMMING observed that certain States appeared to have more deaths than they had cases.

Sir George BUCHANAN pointed out that maps were a double-edged weapon. If, for instance, a black mark in respect of Great Britain meant that scarlet fever was particularly frequent in that country, he would be very glad to receive such a warning, which would lead him to take more effective measures. But, on the other hand, this might mean that the administration was efficient and that the notifications were accurate. In such conditions it was difficult to know what the real position was, since absolutely contrary conclusions might be drawn from the same data.

Mr. SYDENSTRICKER said that when he first saw the maps in question he had immediately realised what objections would be raised. If, for instance, enteric fever or smallpox were taken, these maps might give an impression that all cases were notified. As regarded the manner in which the statistical information was given, the document had great advantages. In the first place, it made it possible to follow the variations of a disease during different seasons of the year. Further, information was included in these tables which did not exist in other documents; for instance — and this met the wishes of Dr. Lutrario — information had been included with regard to mortality in all cases in which it had been available. The figures for previous years had been given whenever he had been able to obtain them. Detailed information by districts had also been given whenever possible. This had been done for the Swiss cantons in the case of an epidemic of smallpox.

Dr. RAJCHMAN said that he recognised that this discussion was very instructive for the Secretariat. Since the publication proposed was the first of a series, and of an experimental

character, it would perhaps be advisable to obtain an opinion as to its utility from all the Health Services with which the Health Organisation was in direct communication. It might perhaps be of interest, should the maps be sent at the same time, if the Health Services were also asked to state their views with regard to their utility.

Sir George BUCHANAN's criticisms were very just but a little too drastic. For instance, in the case of scarlet fever, the figures given for Great Britain were not comparable with those of Bulgaria, but they might perfectly well be compared with those of Switzerland or Denmark. On the other hand, a sudden outbreak of scarlet fever occasionally took place in any given country or in any given year. A country on an exceptional occasion might, therefore, have a black mark on the map for any given year. Further, apart from the manner in which the notification of infectious diseases was carried out, there were certain other very interesting facts. During the most serious outbreak of typhus which had occurred in the city of Moscow, that was to say, in a part of Russia in which the notification of diseases was really carried out, scarlet fever, for some unknown reason, had practically disappeared. If the incidence of scarlet fever during the same year in Moscow, Berlin, Paris, Copenhagen and London were compared, the figures being capable of comparison — if necessary co-efficients of error be provided — interesting variations would certainly be noted.

Sir George BUCHANAN suggested that the documents and proofs might be sent to a certain number of countries and the health authorities invited to give their views. During the present period of tentative activities, it would be a little premature to publish these documents as they were.

Dr. CHODZKO remarked that, in spite of the difference between statistical methods in different countries, certain remarkable facts might be noted. For instance, it would be seen that during the autumn of 1921 the curve for scarlet fever rose similarly for all large European cities ; this showed that a comparison was still possible.

Dr. LUTRARIO agreed with Dr. Chodzko, particularly if account were taken of the figures for mortality, which, in spite of the different statistical methods used, corresponded fairly closely to the real facts. He remembered that 40 years previously M. Bertillon had said in the preface to the *Bulletin of the International Statistical Bureau* that statistics were not a religion but a science making use of mathematics, but without the same accuracy. A statistician must therefore realise the delicacy of the means at his disposal if he would estimate how approximately correct the results which he derived therefrom might be.

Dr. RAJCHMAN asked Sir George Buchanan not to insist on his last proposal. In its former sessions, the Health Committee had laid great stress on the difficulty of obtaining accurate and speedy information with regard to infectious diseases. The official figures for the previous year would be found in the document before the Committee. These figures had, therefore, already been published by the health administrations, and there was no need to ask for their authority to republish them. Besides, these figures appeared in the annex ; why not therefore compare them in the document itself ? Lastly, it would be inadvisable to carry out a limited consultation which might lead to complaints from countries which were not consulted. The authority to decide on publication, and which represented all adhering countries, should be the Health Committee itself.

Sir George BUCHANAN asked leave to make a reservation. He approved of the publication of the figures for the incidence of disease for each country where the notification of diseases was compulsory, and also the publication of the deaths from the diseases in question. Nevertheless, in the present condition of the question, he did not think it advisable to publish tables or maps for each disease which purported to show for a series of countries what were their notification rates and case mortality rates from that disease. The differences in the manner in which notification was carried out might lead to the facts being misunderstood.

The CHAIRMAN understood Sir George Buchanan's attitude. He did not, however, see any objection to this publication, since Mr. Sydenstricker had told the Committee that his only object was to show the necessity for carrying out a detailed enquiry dealing with the basis on which the statistics of various countries were prepared. Should this point of view be properly explained in the preamble, and even repeated when the figures were compared, the difficulties to which Sir George Buchanan had drawn attention would seem to be obviated.

Sir George BUCHANAN said that, in view of the desire expressed by the Committee, he did not think he ought to press his point. He asked, however, that the reservation which he had made might be mentioned in the Minutes.

Mr. SYDENSTRICKER said that the figures as set out side by side invited comparison. The main thing was that this comparison should be made with the proper discernment and reservations.

The Committee approved of the publication of the Epidemiological Report No. 50 and Epidemiological Intelligence No. 7 as submitted by Mr. Sydenstricker.

28. Agreement with the Rockefeller Foundation for an International Interchange of Statisticians.

Sir George BUCHANAN explained that the Sub-Committee had not had time to make a complete study of this question but that its views in general were as follows :

The Medical Director had given a sufficient account of the real state of the case in the document which he had distributed, and in his verbal explanations. He thought that the Committee should thank the Rockefeller Foundation and Dr. Rajchman for the effort that had been made with a view to obtaining this subsidy and organising this scheme, which would be of very great value both at present and in the future. It would perhaps be advisable that the Committee should leave a certain elasticity in the wording of its resolution concerning the use of this fund. At the moment all statisticians were extremely busy, and it would be some time before they would have enough leisure to take part in the interchanges. These exchanges of views between health statisticians, and their co-operation with the Geneva office, would perhaps have the highly desirable result of laying down the general lines for an international co-ordination of the presentation of statistics with common aims, which would result in making these statistics comparable with each other. The Geneva office might thus become the central office in which all these elements would be collated and amalgamated. He thought it would therefore be advisable to leave the matter open so far as the future use of this fund was concerned.

Dr. RAJCHMAN thanked Sir George Buchanan for the kind way in which he had spoken of him. He recognised that the Committee's resolution should be worded in a somewhat elastic manner. Nevertheless, the Committee would have to take a definite decision. The Rockefeller Foundation was offering 21,000 dollars a year and providing 10,500 dollars for the last six months of 1923. Should the Committee desire to accept this offer, a reply should be given as soon as possible. The Secretariat would take the necessary steps to make use of the credit available this year for some useful purpose.

The CHAIRMAN asked Dr. Cumming to transmit the thanks of the Committee to the Rockefeller Foundation for its generous offer, pending the despatch of an official letter of thanks.

Sir George BUCHANAN accepted the task of preparing a draft resolution for consideration at the next meeting.

SEVENTH MEETING

held at Paris on Tuesday, June 5th, 1923, at 10 a.m.

29. Enquiry with Regard to Cancer.

Sir George BUCHANAN said that a large number of documents with regard to the mortality caused by cancer had been collected by the Office international d'hygiène publique, and he and his colleague, Dr. Greenwood, had summarised them in a special report to that body. They had also made suggestions for the detailed study of the causes of the striking differences in cancer mortality which existed between certain European countries, all of which possessed a well-developed system of certification and registration of deaths. The difference between the Netherlands, Italy and England and Wales in regard to cancer of the breast and of the female genital organs was so conspicuous that its investigation might well produce information of the highest value in the great problem of cancer. Most members of the Committee had seen the reports in question and would, he hoped, agree that an enquiry into this subject in the three countries named should be carried out. It must be undertaken by international action and with the facilities which an international health organisation could give.

Before commencing such an enquiry, it would be advisable to clear the ground. It was, for example, necessary to define the exact meaning of the terms used to describe cancer and to know how to get the information in the best way. For this purpose, it would be indispensable to hold a preliminary meeting of statisticians and cancer clinic specialists to lay down an exact definition of the words "curable cancer, incurable cancer, early operation", etc., and to make clear what the mortality statistics meant in each country.

The enquiry itself might then be carried out according to a programme drawn up by this sub-committee of experts. It might have to continue for one or two years. He proposed that the sub-committee should consider how the investigation could be best carried out in practice, and would submit a report to the Health Committee at its October session. The investigation which he had in mind would probably require funds, possibly £1,000 or £2,000 a year for one or two years. The importance of the subject in the case of this world-wide and increasing cause of sickness and death warranted this expenditure. For the moment, however, the only question was as to whether the Committee would be disposed to give its assistance by setting up a sub-committee of statisticians and clinical officers to consider what could be done and to report.

The CHAIRMAN suggested that a sub-committee should be appointed and that it should be composed of Sir George Buchanan and Dr. Lutrario, who might ask Dr. Jitta to join them. (*Agreed.*)

Sir George Buchanan was entrusted with the task of preparing a draft resolution for the next meeting.

30. **The Choice of Effective and Economic Methods of Combating Malaria. — Appointment of Sub-Committee.**

Sir George Buchanan's note and the attached memorandum by Colonel James (Annex 13) were read.

Sir George BUCHANAN said that at one time he had thought of asking Colonel James to come himself to explain his views, with all the authority which he derived from his previous work and experience. But, as he did not know the date on which this question would be discussed, he had given up that idea. He would communicate to Colonel James the warm approval with which the Committee had received his report.

Colonel James's proposal would enable the Committee to give satisfaction to just such requests as that which the Albanian Government had made to the Committee at the beginning of the session. It would be necessary for the Albanian Government to supply all possible information on the position with regard to this epidemic, and an epidemic commissioner might perhaps be sent there, or else a League of Nations commissioner, well acquainted with these questions, to obtain the main facts.

Dr. LUTRARIO drew attention to certain points in the report, where it was suggested that careful investigation should be made as to which method was likely to be the most effective according to circumstances. This idea was a good one but should not be carried too far. There was no method which was the only one which could be used in a given place. Repeated experiments had shown that the problem of malaria was very complex and that it was necessary to combat the disease by all possible methods. It might be advisable to discover one method upon which all efforts might be concentrated, but the others should not be abandoned.

Colonel James had spoken of places where no quinine was necessary at all. Dr. Lutrario desired to dispute this point. It was only necessary to distinguish between the methods of administering quinine. In Italy it was either administered continuously or not — a strong dose two days a week or a weaker dose daily. When one of these two methods was employed systematically, satisfactory results were certain. There must be no idea, however, of administering quinine indefinitely. No-one would be willing to subject himself to such a treatment, and, besides, quinine was not wholly harmless. It had been proved that the continued administering of quinine produced certain deterioration in the kidney system. If, however, immediate results were desired, it was necessary to have recourse to quinine.

From the financial point of view, quinine was expensive, particularly at present. Dr. Lutrario had, however, already reminded the Committee that, in the medical clinic at Rome, important investigations had been carried out by Dr. Ascoli with regard to cynchonine, which produced the same results as quinine provided that it was administered in slightly stronger doses. It should be added that cynchonine was less harmful than quinine; it was less expensive and, where there were symptoms of hæmoglobinuria, they were cured by cynchonine. Thus, from the financial and from the medical point of view, it would be better to use in the first place the alkaloid in question, and, secondarily, quinine.

Sir George BUCHANAN said that he quite realised the importance of the question raised by Dr. Lutrario. It was certainly indispensable that a most careful enquiry should be made into the possibility of substituting cynchonine for quinine whenever it was advisable to do so. When Colonel James alluded to countries in which the use of quinine was superfluous, he was probably thinking of certain parts of Africa (for instance, Khartoum) in which a continuous campaign against mosquitoes had been sufficient to keep down malaria. No quinine was wanted because there was no malaria. It was clear, however, that the special climatic and geographical conditions in Khartoum could not be compared with conditions in European countries such as Albania.

Professor LÉON BERNARD noted that Colonel James's proposal tended towards the establishment of a permanent organisation, emanating from the Health Committee, which would be entrusted with the task of centralising studies with regard to malaria, and in which the local commissions of the States concerned would be represented. The necessity for the Health Committee to take up the study of this question was indubitable. As for ways and means, he did not think that those proposed by Colonel James could be adopted. To begin with, it was not the case that all the States concerned in the question had local commissions. In particular, France had not. Secondly — and this was a question of a much wide bearing — there would be disadvantages in submitting technical problems which might arise before the Committee to a special and, to a certain extent, an independent body. He thought that it would be preferable, in order not to risk dividing and weakening the action of the Committee, to appoint a sub-committee of two or three persons to deal with each question. Such sub-committees might ask a few technical experts to join them (as had already been done in the case of two or three questions). The representatives of the Health Committee would naturally be chosen from among those persons whose competence in the matter was undoubted — for instance, Dr. Lutrario in the case of malaria — and experts, including the representatives of the local commissions, might be attached to them.

To sum up, Professor Léon Bernard proposed to decide that, in a general way, whenever a technical problem arose before the Committee, the latter should nominate from its midst two or three qualified persons to whom technical experts, chosen in the various countries concerned, should be attached.

Dr. RAJCHMAN strongly supported this proposal. It would be really dangerous for the Health Committee to abandon, so to speak, the important problems submitted to it for examination, and such would be the case were Colonel James's suggestion to be followed. On the other hand, with the assistance of the Rockefeller Foundation, the Committee had created an Epidemiological Intelligence Service under its direction, which had at its disposal all the necessary means for undertaking the enquiries. It would therefore appear to be preferable that, as Professor Bernard suggested, a special sub-committee of the Committee should examine the problem from a general point of view and lay down general lines of action, with the advice of such European and American experts as it might think necessary to nominate; if necessary, the sub-committee could apply for assistance to the Epidemiological Intelligence Service.

From the experimental point of view, it was indispensable to take into account the work undertaken in the United States with regard to malaria. Some measures taken were to be attributed to the Federal Public Health Service; others had been carried out on a large scale by the Rockefeller Foundation, which, for that purpose, had voted an annual subsidy of \$250,000 to the Rockefeller Institute in order to experiment with cynchonine.

As regarded a more thorough enquiry into the question, it would be best to refer Colonel James's proposal to a sub-committee with a view to the possibility of international collaboration, taking into account the endeavours which had been made both in North and in South America. Such a procedure would enable the sub-committee to arrive at valuable conclusions within the shortest possible period.

Sir George BUCHANAN said that he had no objection to Professor Léon Bernard's proposal. Colonel James had wished to establish the following principles :

- (1) That the serious spread of malaria in several countries required to be met by the measures most appropriate to the conditions in these countries ;
- (2) That a small body of experts from different countries could give invaluable advice and help by studying the various differences and giving practical guidance.

These principles being accepted, the method to be adopted was, of course, entirely for the Committee to decide.

As regarded the choice of experts, it was not, in his opinion, a question of applying to the two or three great leading authorities on malaria so much as to specialists of undoubted competence with practical working experience. The number of experts to be attached to the sub-committee should be limited to three or four at most, and they should be chosen from among the best qualified of the younger specialists. In this way, the necessary studies might be begun immediately so as to meet the wishes expressed by Albania.

Professor Léon Bernard's excellent proposal might therefore be adopted : a sub-committee nominated, with experts attached, and the Health Section of the Secretariat might, meanwhile, obtain information with regard to Albania for consideration by the sub-committee.

Professor Léon BERNARD thanked Sir George Buchanan for the support which he had given to his proposal. So far as France was concerned, it would be possible to nominate a fully qualified expert.

Dr. RAJCHMAN was very glad to see that the Committee was unanimously agreed on this question and on the final choice of the procedure to be followed, which would be in accordance with that adopted in the case of the other technical organisations of the League of Nations. He asked Professor Léon Bernard to be so good as to submit the text for approval by the Committee. He reminded the Committee that, when a technical committee appointed a sub-committee, it clearly defined the task entrusted to that sub-committee. In this case it was understood that, apart from any experts who might be appointed by the sub-committee, the carrying out of the work of the sub-committee would be entrusted to the Epidemiological Service of the Health Section.

The CHAIRMAN suggested that Dr. Lutrario, Sir George Buchanan and Professor Léon Bernard should be appointed to serve on the sub-committee.

Agreed.

Dr. CHAGAS offered to communicate to the sub-committee, if it thought advisable, a detailed memorandum concerning the results of the campaign against malaria which had been undertaken in South America, and more particularly in Brazil. He drew attention to the excellent results in this field which had been obtained by the weekly destruction of mosquitoes in private houses, that was to say, by a periodical house-to-house disinfection. The problem was very complicated, and Dr. Chagas, who had had opportunities of studying the details of it, felt that the methods to be used to combat the evil should not be uniform, but should be chosen with a view to local conditions.

The CHAIRMAN thanked Dr. Chagas for his offer, which he was very glad to accept in the name of the Committee.

Dr. PULIDO associated himself with the thanks expressed and the conclusions proposed. Professor Léon BERNARD read the following text :

“ The Health Committee appoints a sub-committee on malaria, composed of Dr. Lutrario (Chairman), Sir George Buchanan and Professor Léon Bernard.

“ In accordance with Colonel James’s proposal, this sub-committee is entrusted with the task of examining the information collected with regard to the epidemiological malaria situation throughout the world, and particularly in Europe, and the different prophylactic measures used, or which might be used, to combat this disease, and, lastly, of preparing the replies to questions regarding these problems which might be asked by the health administrations of the different States.

“ With a view to carrying out its task, this sub-committee might co-opt experts of different nations, borrowing them either from public services or from scientific circles. These experts might be entrusted by the sub-committee with local enquiries, or any other research work which might assist them in carrying out their duties. The necessary measures for carrying out this work shall be entrusted to the competent services of the Health Section of the League of Nations. ”

This text and the corresponding part of the Medical Director’s report were unanimously adopted.

31. Communication with regard to the Work of the Mixed Committee. — Adjournment of the Discussion.

The CHAIRMAN said that the report and the resolutions of the Mixed Committee had been communicated to the Secretary-General of the League of Nations. He himself (the Chairman) had just received a letter from the Secretary-General forwarding these documents to him, and begging him to submit them to the Health Committee for consideration. The Chairman would have preferred that the report of the Mixed Committee should have been sent to the Chairman of the Health Committee and that he should have laid it before the Secretary-General, but such had not been the opinion of the Mixed Committee.

In any case, and without wishing to press the question of the grounds for the procedure adopted, the Chairman asked his colleagues to take cognisance of the report distributed to them, with a view to examination and adoption at the next meeting.

Agreed.

32. Appointment of a Committee of Experts for the Standardisation of Sera, of Serological Tests, and of Biological Products.

The Health Committee, on the proposal of the CHAIRMAN, adopted the following resolution :

“ The Health Committee authorises its Chairman to appoint a committee of experts to collaborate with him in the direction of the general work undertaken in conformity with the decisions of the Health Committee with regard to the standardisation of sera, of serological tests, and of biological products.

“ The names of the members of this committee of experts shall be communicated to the members of the Health Committee. ”

33. Resolution concerning an Agreement with the Rockefeller Foundation with regard to the use of its Grants.

On the proposal of Sir George BUCHANAN, the following resolution was adopted :

“ The Committee :

“ (1) Takes note of the correspondence which has taken place between the International Health Board of the Rockefeller Foundation and the Medical Director ;

“ (2) Realises that, by means of the generous contribution suggested, it should be possible to achieve a notable advance in international medical studies :

“ (a) By bringing medical statisticians into closer relations with each other, and with the Service of Epidemiological Intelligence and Public Health Statistics of the Health Section of the Secretariat ;

“ (b) By affording a means by which various important differences between countries, on the basis of their vital statistics, and in the records of epidemics, can be studied and greater uniformity secured ;

“ (3) Authorises the Medical Director to enter into formal communication with the International Health Board of the Rockefeller Foundation and to determine, with the concurrence of the Chairman of the Health Committee, the details of a scheme by which any new contributions from the International Health Board may be most fruitfully utilised for the purposes above indicated. ”

34. Letter from the International Union for Combating Venereal Disease. — Appointment of an Observer.

Dr. RAJCHMAN said that the President of the International Union for Combating Venereal Disease had sent a letter asking the League of Nations, and more particularly the Health Committee, to give favourable consideration to a proposed collaboration in the work of the Union, by the appointment of a representative, who would become one of the vice-presidents of the Union. It was the first time that the question had been raised as to whether the League of Nations, and more especially the Health Committee, could reply in the affirmative to a request the result of which would be that one of its members would form part of the committee of a private international organisation.

Professors Calmette and Bernard had been consulted, since the international association in question had its seat at Paris, and correspondence had also been exchanged with Sir George Buchanan and M. Velghe. Two widely divergent views had been expressed.

M. Velghe, in his reply, had stated that it was not customary for Governments to be represented within free institutions. The League of Nations was a league of Governments. He did not, therefore, think that the Health Committee itself was competent to solve the questions of principle which arose. Sir George Buchanan, on the other hand, did not share this opinion. In view of these divergences of opinion, it was natural that the Legal Section of the Secretariat should have been consulted. That Section had replied that, up to the present, no precedent existed, and that the League of Nations was not officially represented on the committee of any private association. Although, from a strictly legal point of view, such representation should not necessarily be regarded as impossible, it would seem somewhat difficult to consider it as compatible with the official and governmental character of the League of Nations if a representative of the League were to act as the responsible director of a private association. It would, however, be different if the League were to send observers or representatives to obtain information with regard to the work which was being carried on. This had been done in a certain number of cases, and a proposal of this nature might perhaps be submitted with advantage to the International Union for Combating Venereal Disease.

On the other hand, it might be pointed out that the Health Committee was only an advisory committee, one composed of technical experts to advise the Council, and that therefore it had not in itself an independent existence. From this point of view also it would perhaps be difficult to give it authority to be permanently represented on an executive council. The question had then been submitted for consideration by the other competent Sections of the Secretariat. It had been suggested that it might be possible for the Committee not to be represented, but to send an observer to keep it informed of the work of the Union.

Sir George BUCHANAN said that the contradiction which the Medical Director had indicated between his reply and that of M. Velghe was not so great as it seemed. In the first part of his letter, Sir George Buchanan had recognised that it might be desirable to accept the proposal for representation, but he had stated in the second part that, since the organisation making the request was of an international nature, and since its work might eventually lead to official international action, the Health Committee would find an advantage in having had a member of the Committee present at the meetings of that organisation in the capacity of an observer, so as to keep the Committee in touch with the work undertaken and the spirit in which resolutions were adopted.

The primary object in Sir George Buchanan's mind in approving the representation of the Health Committee on the international organ in question, was to keep the Committee informed as to its work. Should it, therefore, be considered preferable that the member of the Committee who would be nominated should take part in the work in the capacity of an observer only, he saw no objection. The desired result would still be attained.

The CHAIRMAN noted that the opinion of the Committee was favourable to this proposal, and begged Professor Léon Bernard, who resided at Paris, to be so good as to act as an observer attached to the International Union for Combating Venereal Disease.

This proposal was unanimously adopted.

35. Appointment of an Observer on the International Union for Combating Tuberculosis.

Professor Léon BERNARD said that he would be very glad to accept the honour which the Committee had just paid him. He asked to be allowed to take advantage of the opportunity thus given him to draw attention to the desirability of the Health Committee being represented, under similar conditions, at the meetings of the International Union for Combating Tuberculosis, of which he himself was Secretary-General. He hoped that the Committee would not think this too presumptuous, all the more so as such an appointment would very properly oblige him to report to the Committee every year on the work of the Union.

This proposal was unanimously adopted.

36. Report on the Work of the Epidemic Commission. — Adjournment of the Discussion.

The report on the work of the Epidemic Commission (Annex 14) was read.
The discussion was adjourned until the next day.

EIGHTH MEETING

held at Paris on Tuesday, June 5th, 1923, at 4 p.m.

Dr. Cumming was excused attendance.

37. Adoption of the Mixed Commission's proposal for the Establishment of a Permanent Health Organisation.

The Health Committee adopted the proposal submitted by the Mixed Commission (Annex 15).

The CHAIRMAN said that he was very glad to be able to send this scheme to the Secretary-General of the League of Nations, and that it would doubtless produce satisfactory results.

38. Establishment of a Sub-Committee for an Enquiry regarding Cancer.

Sir George BUCHANAN read the following resolution dealing with the appointment of a sub-committee for an enquiry regarding cancer :

“ The Health Committee appoints a sub-committee on Cancer consisting of Sir George BUCHANAN and Dr. LUTRARIO.

“ It will be the duty of the sub-committee to take note of the communications recently made to the Office international d'hygiène publique on the subject of the notable differences which exist in the mortality from cancer of the female breast and genital organs in different countries, notably England and Wales, Italy and the Netherlands, to consider the means most suitable for the determination of the causes of these differences ; and to present at a later session of the Committee a plan of practical work for this purpose, if, in its opinion, such work is likely to produce useful results in the elucidation of the cancer-problem.

“ The sub-committee is empowered to add to its membership Dr. Josephus Jitta, President of the Public Health Council of the Netherlands. It is also empowered, with the sanction of the Chairman of the Health Committee, to co-opt scientific or medical members from the different countries concerned (whether in the public service or otherwise) as experts in the question under consideration.

“ Executive work required in connection with the work of the sub-committee will be undertaken by the appropriate services of the Health Section of the League of Nations.”

The resolution was adopted.

Sir George Buchanan said that he proposed to have a short interview with Dr. Lutrario before the end of the present session to discuss this subject. He asked Mr. Sydenstricker to be good enough to remain in Paris in order to be present at the interview.

39. Draft Convention on the Sanitary Control of Traffic on Waterways.

(1) Dr. LUTRARIO explained the outstanding points in his report. (Annex 16.) It was not a question of a definite scheme but of a general sketch expounding the ideas expressed by the sub-committee, of which Dr. Chodzko had been Chairman. The Rapporteur had caused a certain number of charts to be prepared. The first showed the great cholera epidemics which had broken out in Europe during the last century. All of them had come from the East. Some of them had closely followed the courses of rivers.

The second chart gave diagrams showing the main routes of communication between the Black Sea and the Baltic on the one hand and the North Sea, the Atlantic Ocean and the Mediterranean on the other.

The third chart showed this information in greater detail. It was a hydrographic chart of rivers and large navigable canals. On the fourth chart the rivers varied in width according to whether they were navigable by ships of a tonnage greater than 1,000 tons or between 1,000 and 400 tons, or under 400 tons.

The fourth chart represented that part of the European Continent in which river navigation was perhaps most general. On that chart the rivers varied in width according to the tonnage of the vessels they could receive.

These charts showed that it was possible to go from the Black Sea to the Baltic, the North Sea, the Channel and the Atlantic, and also to pass into the Mediterranean, without leaving navigable waterways. As a result of this the dangers from the point of view of infection were considerable.

(2) The scheme closely adhered to the principles which had been adopted at the last session of the Committee. These principles had been accepted in their entirety by the Transit sub-committee. They might be summarised as follows :

(a) It was proposed to lay down measures which would not hamper trade or commerce to an undue extent and exhaust so important a source of wealth as that represented by inland navigation.

(b) It was necessary to provide for the prompt and loyal exchange of sanitary information between the States concerned.

(c) The boundaries of the regions under disease should be definitely fixed.

(d) The services dealing with navigable waterways should be under the public health administrations of the countries concerned.

(e) The services should be planned in as simple a form as possible so far as the equipment was concerned and use should be made of material available on the spot.

(f) Too great expenditure should not be incurred in fitting up and maintaining equipment.

(g) The close collaboration of the various sanitary or administrative organisations supervising such navigable waterways should be obtained as far as possible.

(3) A few questions had, however, been held over.

There was first the question of expenditure. In the Communications and Transit Committee the prevailing idea had seemed to be that such expenditure should not fall on river navigation which, it had to be remembered, was not too well supplied with funds.

On the other hand, M. Velghe and Sir George Buchanan had pointed out in the Health Committee that such navigation was not so poorly provided with funds as had been supposed, that it derived benefit from the various sanitary measures, and that it was only fair that such expenditure, or at least the greater part of it, should be borne by river navigation. It was further recommended that the revenue so obtained should be employed for the benefit of the service and should not be regarded as an additional source of revenue for the State. It was a general expression of opinion that gave rise to no definite resolution.

Another question which had been held over was that of penalties. This problem had been dealt with in London on the occasion of the 1920 International Conference, but it had not been found possible to solve it since it affected the sovereignty of States.

A third reservation had also been made in respect of contamination of the water of rivers. It was a difficult matter, to settle the moment at which a river was contaminated, the moment at which it ceased to be contaminated, and the area over which contamination extended.

(4) The speaker stated that the waterways to which he more particularly referred were international waterways, rivers and lakes.

Each waterway had special features of its own which might differ from those of other waterways to a very considerable extent.

It was possible to consider the waterway as a whole (river basin), or from the point of view of its various parts or stretches. The importance of the whole waterway and of the different sectors varied according to the possibilities and the nature of the navigation which could be carried on, the character and the volume of the traffic, and the number and position of the towns and villages on the banks.

There were a great many different types of river craft, ranging from mere skiffs and rafts to barges, lighters, sailing ships, vessels of fairly considerable tonnage for the conveyance of passengers and freight — and even large packet steamers in certain cases.

In view of the great differences to which he had already referred, the problem under consideration assumed a great variety of aspects. The existence of these differences greatly increased the sources of danger and made it a matter of extreme difficulty to lay down suitable methods for guarding against these dangers or checking them when disease made its appearance. In that respect the problem was more difficult than the analogous problem in the case of shipping on the high seas. The maritime problem could be sharply delimited, whilst the river problem was apt to merge imperceptibly into a great number of other questions in a manner which made it impossible to define clearly the limits within which the danger might appear. They would have to be satisfied with securing a moderate degree of safety ; they could not rely on obtaining that complete security which was possible in other departments where prophylactic measures were employed.

(5) The scheme was divided into three parts or sections.

The first section referred to the object of the Convention, to the organisations for giving effect to it, to the relation to be established between these organisations and also to the furnishing of information on matters relating to public health.

As regards the object of the scheme, the first section provided that sanitary measures should be drawn up with the double object of securing their *effectiveness* and *uniformity*. That was the governing principle in the whole scheme, and unless this principle was enforced their work would be absolutely fruitless.

They had accordingly to abandon certain measures which were survivals of ancient ideas of prophylaxis, and arrange for a uniform prophylactic scheme.

The public health administrations themselves were to act as the executive organisations and must maintain close relations with each other with a view to ensuring unity of control.

Information on public health matters was to be of two kinds, firstly, information relating to sanitary conditions in general, and secondly, information dealing with certain diseases which would take the form of notification on exactly the same lines as the notification provided for in existing international conventions.

Such notification was compulsory on the appearance of :

- (a) Any case of cholera or bubonic plague ;
- (b) Any "focus" of typhus, relapsing fever, bacillary dysentery and smallpox ;
- (c) Any outbreak of influenza of the nature of an epidemic.

The notifications would accordingly be of three kinds : notifications of cases, of "foci", and of epidemics, according to the diseases to which the notifications referred.

Mention was made in the draft of the particulars which should be included in the notification, the place, date, number of cases, area of the district affected (if in the neighbourhood of a river), unusual mortality among rats, if the notification referred to plague, and also the action taken.

(6) The second part referred in particular to the arrangements made and prophylactic measures taken to prevent the outbreak of epidemics on river systems.

These arrangements and measures applied to vessels and to the setting up of sanitary stations and the selection of places where supplies of drinking water might be obtained.

(a) As regards vessels the scheme provided for :

A special return (giving names of master, crew, tonnage and distinguishing features of vessel). A special register should be kept containing particulars of the vessels ; sanitary equipment and arrangements on board—drinking water, latrines, stores of disinfectants.

Other precautions, such as :

burying of excreta, measures to be taken monthly for the destruction of rats' and, where possible, the disinfecting of bilge water, etc.

(b) As regards sanitary stations, the scheme provided for :

(1) The manner of their construction (position of the examination rooms, rooms for disinfection, and the destruction of insects, baths, disinfectants, stores, and methods of destroying rats) ;

(2) The method of indicating the position of sanitary stations by day and also by night ;

(3) Co-operation with hospitals and laboratories ;

(4) A qualified staff to secure the proper working of these stations.

(c) The scheme laid down the interval to be observed between places where supplies of drinking water might be obtained, and also the manner in which their position might be indicated in the daytime and at night.

A topographical chart should be prepared for each navigable system showing the sanitary stations and places where supplies of drinking water were obtainable.

(7) The third section dealt with the manner in which the supervision was carried out.

The general provisions were given under the first heading in this section.

The working of the system was described in normal times and also when danger was imminent.

During normal periods no supervision was to be exercised except at frontier stations or at other places where supervision appeared to be necessary.

On the appearance of any of the diseases mentioned above, the system of sanitary supervision on a greater or a lesser scale, according to the requirements of the situation, was immediately to be set in motion.

When the scheme was brought into operation the following measures were to be taken :

(a) The other States concerned should be notified of the sectors on which sanitary supervision had been established.

(b) Certain provisions should be enforced on land.

(c) Provisions relating to vessels should come into force.

The measures to be taken on land through the instrumentality of the sanitary stations would consist of the following :

Prohibition of embarkation of patients and contact cases ;

Prohibition of export of suspected goods in accordance with the Paris Convention of 1912 ;

Measures to prevent rats getting on board vessels.

The provisions in the scheme which referred to vessels were as follows :

Medical inspection of passengers and crew ;

Isolation of patients ;

The keeping of contact cases under observation ;

Disinfection, delousing, and the destruction of rats ;
Vaccination where necessary ;
Supervision of the sanitary equipment of the vessel (drinking water, latrines) ;
The issue of health passports to persons who had been under sanitary "surveillance" ;

Certificate showing the measures which had been carried out.

All vessels plying in the threatened areas should be provided with a special ship's document (bill of health).

Heading 2 in the same section contained special detailed measures which were applicable according to the nature of the disease — cholera, bubonic plague, typhus, relapsing fever, etc.

It was accordingly laid down in the case of cholera, for example, that patients should be landed and isolated, that contact cases should be kept under observation for a period of five days either on board ship or on shore, that persons should be subjected to sanitary "surveillance" for a period of five days, that bacteriological examinations should be carried out, and that any parts of the vessel and articles which the sanitary authorities might have reason to believe were contaminated should be disinfected.

Furthermore, special measures should be taken for the destruction of rats in the case of plague, for delousing in the case of typhus, for vaccination in the case of smallpox, etc. etc.

(8) The speaker pointed out in conclusion that the subject matter had been divided into three parts or sections.

The first dealt with the object of the regulations, the organisations concerned and the supply of information on sanitary matters (ordinary information and notification).

The second part related to methods for the prevention of epidemics in connection with the vessels themselves, the sanitary stations, and the places where supplies of drinking water could be obtained.

The third part referred to measures of prophylaxis and specified, where necessary, general and special measures suitable to each type of disease under consideration.

(9) Such were the general lines of the draft Convention which had been prepared. It was as yet too early to state what its fate might be, but if it secured the support of the members present, and if it could form a starting point for a body of international regulations, the Sub-Committee might consider itself fortunate in having thereby contributed to filling a definite gap and to mapping out a prophylactic defensive scheme calculated to check a very serious danger.

The CHAIRMAN thanked Dr. Lutrario for his statement and for the most valuable work that he and Dr. Chodzko had done.

Sir George BUCHANAN paid a tribute to the important work done by Dr. Lutrario and Dr. Chodzko. He would first like to know what procedure would be followed in respect of the draft convention. Was it to be submitted to the Mixed Committee appointed by the Health and Transit Committees ? Was it to serve as a specimen for States intending to conclude conventions with each other relating to waterways of an international character ? Would it be put forward by the League for adoption as a general convention ? Would the convention exclusively apply to Europe, or was it considered applicable to South American rivers and to the Niger, Congo and Nile riparian States ?

Dr. LUTRARIO replied that the scheme would certainly be submitted to the Mixed Health and Transit Committee. In his opinion the convention should be additional to that of 1912 and be a general convention binding on all adhering States. It would also contain principles which might inspire special agreements between riparian States. As regarded the extent to which it should apply, the accepted idea would appear to be that the convention should apply to all countries of the world which were riparian States of international rivers.

Sir George BUCHANAN asked whether the scheme after consideration by the Mixed Committee would be submitted to an international conference, with a view to the conclusion of a health convention dealing with navigable waterways, as had been the case with the Convention of 1912.

Dr. LUTRARIO replied that an international conference might be convened by the League of Nations, which had already convened the Warsaw Conference.

Dr. CHODZKO did not agree with Dr. Lutrario as to the nature of the draft convention. There already existed a general convention on this subject — that of 1912. The scheme before the Committee could not enter into competition with that convention, of which it was only a development. Under these circumstances, it was perhaps unnecessary to convene an international conference. It might be sufficient at first, for the League of Nations, to recommend the riparian States to prepare conventions of the type proposed. Should these conventions become numerous it would then be advisable to conclude a general convention, at least in respect of Europe, since it was difficult to conclude a convention which would apply to the whole world. If the scheme became a general convention now there was danger of it remaining a dead letter. The 1912 convention had only begun to play an active part after the riparian States had begun to conclude partial conventions with each other.

Sir George BUCHANAN said that Dr. Chodzko seemed to think that the scheme might provide a basis for States desirous of concluding special conventions. He asked whether the Barcelona Convention contained a special decision giving the League of Nations power to provide for the conclusion of conventions dealing with sanitary control on navigable waterways.

Dr. RAJCHMAN replied that the Barcelona Convention might be interpreted as allowing a General Conference, or even the Transit Committee to prepare schemes of any kind. On the other hand, various international Commissions existed which dealt with waterways of an international character. The relations between these Commissions and the Transit Organisation of the League of Nations were not yet very clearly defined, since the Commissions were directly derived from the Treaty of Versailles, whereas the Transit Organisation of the League of Nations existed through the intermediary of the Covenant of the League of Nations.

In practice several methods of procedure were possible. To begin with there was the precedent of the Warsaw Conference which had been convened by the Polish Government with the assistance of the League of Nations to discuss the model and the basis of health conventions which might be concluded between adjoining States. The Warsaw Conference had worked on the basis of the Paris Health Convention, making slight modifications in it in order to bring it up to date. This work had not been in vain, as, since that time, thirteen conventions on that model had been concluded. This precedent might be followed. It would then be advisable to decide how the model convention drawn up by the Health and Transit Committees should be presented to the States. It might be laid before the States by the Council of the League. This method, however, was perhaps not the best one.

Another procedure would be to convene a General Conference which would take the scheme approved by the Mixed Health and Transit Committee as a basis for discussion. From the practical point of view, however, it would seem doubtful whether the Governments would be willing to call a Conference solely for this purpose. But there was always the Office international d'hygiène publique. The Committee might perhaps ask the Council of the League of Nations to request the Office international to hold a special meeting which representatives of all the States Members of the League of Nations might attend. The Convention adopted would be a model and a recommendation. The Health Committee would then have to take measures to ensure that the procedure laid down in this model was followed.

The third method of procedure would be that proposed by Dr. Lutrario, namely, that the scheme should be adopted as an international convention. In that case it would perhaps be advisable to wait till the Health Conference, which was to discuss modifications in the 1912 Paris Convention, was convened.

In any case, it would be necessary to carry out a supplementary enquiry into the conditions in countries outside Europe. With a view to such an enquiry the Secretariat had consulted Dr. Chagas and Professor Miyajima and had asked Dr. Andrew Balfour to obtain information with regard to British Possessions. Dr. Balfour, after enquiry at the Colonial Office, did not think that any model regulations with regard to waterways existed. As regarded the United States, Dr. Rajchman had been promised detailed information.

Dr. CHAGAS said that in South America there were three waterways, the Amazon, the Paraguay and the Parana with which several countries were concerned — in the North : Brazil, Peru and Bolivia ; in the South : Argentine, Brazil, Paraguay and Uruguay. It was true that there was a Pan-American Convention in respect of communication by sea, but there was none in respect of river traffic. In Brazil, regulations existed but they were only aimed at prevention of disease in the interior of a country. The 1912 Convention did not deal directly with this matter. It would be of great advantage to hold an International Conference which would deal with this point, in particular. Dr. Rajchman had suggested that they should wait till the 1912 Convention had been amended. But when would it be amended ? Dr. Chagas, trusted that the Health Committee would take some action in this matter, for the question was of great interest to South American countries.

Dr. LUTRARIO said that the sub-committee had carried out an enquiry in the technical sphere without concerning itself with the procedure for application. Nevertheless, he thought that an International Conference would be advisable, even if it only resulted in an exchange of views. It would always mark a certain progress. The part played by river traffic in the spread of infectious diseases was enormous.

Dr. CHODZKO said that the question would be quite simple if it were dealt with by none but health officials ; but the commercial experts on the Transit Committee must also be taken into consideration. Should the Health Committee and the Transit Committee come to an agreement, the only thing left to do would be to ask the Council of the League of Nations to convene an International Conference.

Sir George BUCHANAN asked Dr. Chagas whether on the enormous South American rivers there were not certain ports which were subject to the regime of maritime ports, as was the case with certain British ports situated on estuaries. He believed that Hankow, hundreds of miles up the river Yangtze, was a maritime port.

Dr. CHAGAS replied that it was impossible to apply the same regulations to river and to maritime traffic. On the Amazon, the regulations for maritime traffic applied only to one port, that of Manaus, at which sanitary establishments existed. But from that port ships went right up to Peru and Bolivia, where absolutely no arrangements for sanitary protection existed ; it was for this reason that permanent sanitary protective measures were necessary at that port, for instance, against yellow fever, which was endemic in Peru.

The CHAIRMAN asked whether Dr. Chagas would be wholly satisfied if an International Health Conference was convened. Such a Conference would call together representatives of countries, many of which were in no way interested in the question. At the European Health Conference at Warsaw there were only representatives of 12 or 13 States particularly interested

in the questions under consideration and those States immediately began to conclude bilateral conventions. The same result might be obtained by the procedure suggested by Dr. Rajchman, that is to say, by the convening of a Health Conference through the Office international d'hygiène publique. Such a Conference would give to the scheme a larger measure of authority than the Health Committee could do. Regional Conferences might then be held in those parts of the world which were most directly concerned. By these means practical results might be obtained in the minimum of time.

Dr. CHAGAS insisted that the 1912 Convention was absolutely out of date and in disagreement with all modern theory.

Sir George BUCHANAN said that he was glad to see that the Committee was unanimous as to the necessity for revising the out-of-date 1912 Convention. It was desirable that the members of the Committee should urge upon their respective Governments the advisability of convening an International Health Conference for that purpose as soon as possible. It would then be possible to complete the amended Convention by additional clauses or by a special annex dealing with navigable waterways. In the meantime, the Mixed Transit and Health Committee might meet and the draft model Convention which had been approved might be communicated for information to the Governments concerned.

The Council could recommend the draft as a model for all Conventions that the riparian States of international rivers might desire to conclude with each other pending the meeting of an International Conference for the revision of the 1912 Convention. It would also be advisable to keep the Office international d'hygiène publique informed of what was going on since the study of Conventions was part of its work as an advisory body.

The general discussion was closed.

The Committee deferred the detailed examination of the draft Convention to its next meeting.

40. Continuation of the Discussion on the Report on the Work of the Epidemic Commission*

Sir George BUCHANAN began by expressing his fear that Dr. Norman White on his return from the mission on which he had been sent to the Far East, would not be in a position, for some time, to submit his report on the work regarding epidemics in Eastern Europe.

Dr. RAJCHMAN thought that Dr. Norman White's report would be laid before the Committee during its seventh session.

Sir George BUCHANAN then dealt with the question of the work done by the Epidemic Commissioners in Thrace, Greece, etc. He said that Dr. Wroczynski's report had enabled the Committee to appreciate the admirable work done by these Commissioners. No propaganda could be better than that which they were carrying on whether from the humanitarian point of view or from the point of view of the League of Nations itself.

The only unsatisfactory aspect of the question was that the funds at the disposal of this picked staff were in danger of becoming exhausted, and that it might find itself in the most regrettable position of being unable to take the measures that were indispensable to prevent an unforeseen disaster. In the case of Greece it had been possible to avoid this, thanks to the balance provided by Dr. Nansen, but this was a mere accident. Another time there might be an epidemic of exceptional international importance, and the Epidemic Commissioners would be unable to act. Even if it involved an alteration in the Covenant it would be desirable that a procedure should be found which would allow of credit for emergency, epidemic work being included in the ordinary budget of the League of Nations. Such a credit need not be a very large one and would be intended to meet urgent and unexpected requirements.

Dr. RAJCHMAN warmly thanked Sir George Buchanan for having raised this important question. The Epidemic Commission had four centres of activity, Poland, Russia, Greece, and Latvia. In Poland in the month of January there was a sum of £10,000 sterling available which the Epidemic Commission held for the Polish Government. This sum was now reduced to £3,000 and would be all expended in six weeks at latest, which was the probable date of Dr. Norman White's return. In order to facilitate Dr. Norman White's task, instructions had been given to the Secretary of the Epidemic Commission at Warsaw to make a tour of inspection which would enable Dr. Norman White to finish this part of his work in a short time.

The work, however, could not be completed as quickly, where Latvia and Russia were concerned. In the case of Latvia, negotiations with the Government had been set on foot with regard to the establishment of a quarantine station at Libau. £10,000 sterling had been promised for the establishment of this station after an agreement had been reached between the Epidemic Commission and the Latvian Government as to the use to be made of the grant. When the Health Section had received the plans for this station they had perceived that, in fact, what was proposed was a maritime quarantine station properly so-called, established on the model of those at Hamburg and Bremen and intended to safeguard Latvia against invasion arriving by sea.

The task of the Epidemic Commission was to defend Western Europe against disease coming from Eastern Europe. Since through Latvia a very considerable number of emigrants were travelling to the West, and particularly towards America, the Epidemic Commission was prepared to give it its financial assistance, but only in respect of that part of the quarantine

station which would be intended for the emigrants, such as barracks, an isolation hospital, disinfecting plant, etc. As a result of negotiations set on foot by Dr. Pantaleoni, Epidemic Commissioner at Moscow, it was agreed that this part of the scheme could be completed for £6,000. This saving would enable the work in Greece to be continued. Dr. Rajchman expressed his gratitude to Professor Karnalis, Chief Port Medical Officer at Genoa who had made suggestions with regard to such modifications of the Libau plans as might be advisable.

As for Russia, the principle of collaboration with the Russian Vaccination Committee had been approved in the previous January so far as concerned an experimental enquiry into the effect of buccal vaccination against cholera. This experiment was being carried out, but since there was no reason to fear a serious cholera epidemic this year, it would not be sufficiently decisive. The Russian Committee had, however, decided to carry out experiments with regard to cholera, typhoid fever, and dysentery at the same time. Two representatives of the Russian Vaccination Committee were at that moment in Paris. Dr. Rajchman had discussed the question with them and hoped that the Vaccination Committee would be able to meet in a few days.

Sir William Leishman, who had been appointed by the Health Committee as an expert adviser, had been accepted by the Soviet Government. As he had been appointed Director of Medical Services of the British Army and would take up his duties in July, he had nominated Professor Peary of the London School of Medicine as his substitute. Professor Peary was coming to Paris at the end of the week to discuss the scheme, and the programme for the experiment that was being carried out with the two Russian Professors. Further, Professor Zinsser of Harvard University, United States, would proceed with the complete agreement of all concerned, to Russia as Epidemic Commissioner of the Health Committee, to follow the experiments that were being carried out. There was thus reason to hope that useful results might be obtained in Russia.

It also seemed possible that another enquiry in the same field might be carried out. Dr. Rajchman showed from a chart of cholera epidemics from 1823 to 1923 that, apart from the critical periods of world-wide or European epidemic, there were always local epidemics taking place in Russia. The Russian specialists themselves appeared to recognise that an endemic breeding ground of Asiatic cholera existed in Europe, in Russia between Odessa and Astrakan. On the other hand, there were towns like Rostoff in which many cases of cholera were observed almost every year with a period of recrudescence. It was also known that the rôle played by carriers was apparently much more important than in the case of the other epidemics that had hitherto been observed. Since experiments with intestinal vaccination were going to be made in Russia, it would be logical to take advantage of this opportunity to carry out an enquiry at the same time into the endemic breeding ground of cholera in Europe.

The Russian specialists were prepared for this procedure so long as the enquiry was to be carried out under the same conditions as the previous one, particularly where Dr. Zinsser was concerned. The Vaccination Committee would therefore turn itself into an Investigation Committee for an enquiry into this endemic breeding ground. The scheme for research and study might be carried out in close liaison with the Health Committee through the intermediary of the Epidemic Commission. The expenses to be provided for would not be very considerable. Arrangements would have to be made for the sending of necessary medical and laboratory supplies and the establishment of two or three mobile bacteriological laboratories.

The existence in Russia of an endemic cholera breeding ground and of a large epidemic breeding ground for malaria made it necessary that the activities of the Health Services in Poland and in other States adjacent to the Russian frontier should be continued.

The sanitary zone in Poland had just been completed. Information collected at Warsaw showed that two months previously there had been 114 epidemic hospitals in the zone between that town and the Russian frontier. These hospitals were strung out over three lines. There were also two or three large quarantine stations and a complete health organisation including vaccination squads, disinfection columns etc. The budget of this immense health organisation amounted to about two and a half million gold francs per year.

Sir George Buchanan had raised the question of whether it would not be possible to earmark a special credit in the budget of the League of Nations to provide the urgent assistance necessary in the case of unforeseen calamities. His own personal experience led him to think that this special fund need not be a very large one.

The disproportion between the sacrifices made by the Polish, Latvian, Roumanian, and other Governments, and the financial resources of the Epidemic Commission was most striking. When considering this matter, however, the example of Greece should be borne in mind so far as possible procedure was concerned. Negotiations had begun two days previously with a view to the acquisition of buccal vaccine for Russia. The cost of a dose of this vaccine, which had been much reduced, was about five times the average cost in Greece of vaccinating a person against cholera, typhoid fever and smallpox, including the salaries of the Commissioners and of the staff of the vaccination squads. This would show that much could be done at very small expense.

The question arose as to how an Anti-Epidemic Fund could be obtained. As a member of the Epidemic Commission, with the work of which he had been associated since the beginning, Dr. Rajchman had been able to study all aspects of this question. Up to the present it had not only been discussed by the Secretariat, but had been raised by the President of the Italian Red Cross who had proposed a draft international convention by which all States would undertake to establish an Insurance Fund against calamities, earthquakes, famine, etc. An International Committee of the Red Cross would be established as the central organisation. The Governments would remit special funds and the carrying out of the work would be exclusively entrusted to the various National Red Crosses throughout the world.

When this draft had been discussed by the Council two different views were expressed. One was that these questions, which were regarded as somewhat delicate, should be left alone; the other was very definitely expressed by Lord Balfour. The British Government did not wish the Red Cross Societies to meddle with questions which were not their business. These organisations were meant to provide relief in time of war, and were taking too much interest in questions affecting public health. Lord Balfour also referred to the example of the Epidemic Commission which had not succeeded in obtaining funds for the clearly defined object. After a long discussion, the Council referred this scheme to the Secretariat for examination from four points of view, political, technical, administrative and financial. It had been suggested to the Rapporteur to the Council that he should add that, if necessary, the Council should ask the Health Committee for its opinion.

Dr. Rajchman was very grateful to Sir George Buchanan for having suggested that the Health Committee might deal with such a problem.

This problem was now under consideration, and, should the Health Committee desire to deal with it, it would be sufficient to pass a resolution that the Council should be asked to refer this problem to the Health Committee for consideration. The League of Red Cross Societies and the International Committee of the Red Cross had now a common organisation, the Mixed Committee, which was about to consider the proposal of the President of the Italian Red Cross. As a matter of fact, only two Red Cross organisations were at that time in a position to meet the expense of any relief organisation, namely, the American Red Cross and the British Red Cross. In any case the League of Red Cross Societies intended to examine all the activities of these organisations since the beginning of the war, from the point of view of international assistance, so that for the future they might derive information from the experience that had been obtained on so gigantic a scale. The whole of this question was at the moment under consideration.

It was not possible at present to draw on the general budget of the League of Nations for relief credits of this nature. Nevertheless, if, after close study, the general principle of insurance against unexpected disasters were adopted, it would perhaps be possible to ask the States to undertake to pay, if necessary, a supplementary contribution equivalent to 5 or 10 per cent of their normal contribution to the League of Nations. Such a contribution would only be paid should it be necessary to supplement the fund in question. It would be better not to contemplate an amendment to the Covenant such as to involve considerable delay and innumerable complications. To sum up, Dr. Rajchman's proposals were that, at its next session, the Health Committee should, if it thought fit, pass a resolution enunciating the principles of the proposals made by Sir George Buchanan. Indeed, it would be all the easier to carry out a thorough enquiry into this question at that session, as the intentions of the United States would then be known.

The CHAIRMAN congratulated Dr. Rajchman, in the name of the Committee, on his most interesting statement and particularly on the saving which would allow of the task undertaken being carried out. He was also very happy to be able to express the gratitude of the Committee to the three Epidemic Commissioners in the East and begged Sir George Buchanan to be so good as to prepare a text embodying the proposal which he had submitted, and for which the Chairman begged to thank him.

Agreed.

NINTH MEETING

held at Paris on Wednesday, June 6th, 1923, at 10 a.m.

41. Detailed Examination of the Draft Convention on Sanitary Control of Traffic on Waterways.

Sir George BUCHANAN suggested that the title should be " Model Convention " instead of " Draft Convention ".

This was agreed.

The various articles of the draft text proposed by the Sub-Committee were adopted successively, subject to the following observations :

Article 1.

Sir George BUCHANAN suggested that it should be made quite clear that the new Convention in no way affected the obligations binding States and derived from International Health Conventions already in force. It might happen that certain ports could not be definitely classed either as maritime ports or as river ports.

The CHAIRMAN said that this comment would be taken into account when the final text was drafted.

Article 3.

Professor LÉON BERNARD asked whether it was indispensable for the heads of administrations to meet twice a year. He proposed to say "once a year".

This was agreed.

Articles 4 and 5.

Sir George BUCHANAN asked that in one of these articles, or in a special article, a clause should be inserted laying down that tasks entrusted to the League of Nations should be first accepted by the Council.

Dr. RAJCHMAN replied that so far as arbitration and mediation were concerned there were already precedents in the Barcelona General Convention and the bilateral Health Conventions of Eastern and Central Europe which contained clauses of this nature. The Council at its last session had given the Health Committee authority to deal with these questions. Furthermore, no technical organisation of the League could undertake a task of this nature without a formal resolution passed by the Council.

Dr. LUTRARIO did not think it necessary to make definite provision for authority from the Council, as the necessity for it was obvious.

This was agreed.

Article 5.

Sir George BUCHANAN asked that it should be made quite clear whether the League of Nations was to take the initiative in respect of inspection and would be responsible in practice for the working of the system or whether the League was to wait for a request from States parties to the Convention.

Dr. LUTRARIO thought that both cases might arise, but that the League of Nations could not be denied the right to intervene. In any case, it was only a question of a technical enquiry.

Sir George BUCHANAN said that it would then be preferable to say that the League of Nations might make such inspections as it thought necessary. He did not wish the League to run any danger of incurring responsibility through a wording which was too vague.

Dr. LUTRARIO would have preferred a text which was not too definite so as to avoid any danger of arousing susceptibilities with regard to the question of sovereignty. Furthermore, these were technical inspections which could not involve any responsibility on the League of Nations.

The CHAIRMAN thought that this question was similar to that which had been raised by Dr. Chagas in respect of international sanitary inspection of shipping and that it should be dealt with by the Epidemic Commission.

Professor LÉON BERNARD proposed to say "the League of Nations may, by agreement with the National Health Services concerned, proceed.....".

Dr. LUTRARIO accepted this suggestion.

After an exchange of views, *the following text proposed by Dr. Rajchman was adopted :*

"The Health Organisation of the League of Nations may, in agreement with the Public Health Departments of the States concerned, arrange for technical inspections.....".

Article 6.

Sir George BUCHANAN asked that in this article and in the other articles of the Convention the words "Health Committee" should be deleted. If the words "League of Nations" were used without saying anything more definite, the difficulty due to the functions of the Office international d'hygiène publique, which must be taken into account, would be avoided.

Dr. RAJCHMAN asked Sir George Buchanan not to press this point. The Health Committee must not appear to think that its functions would not continue permanently, for such an idea would be contrary to the decision of the Assembly and the undoubted intention of its members. Should the Committee desire to provide for the hypothesis of a possible transformation, satisfaction might be given to Sir George Buchanan by substituting the words "the Health Organisation of the League of Nations" for "The League of Nations (Health Committee)".

Sir George BUCHANAN accepted this proposal, *which was unanimously adopted.*

Article 7.

Following on a remark from Professor Léon Bernard, Dr. LUTRARIO proposed to complete the first paragraph by adding the words "to which the provisions of this Convention apply".

Sir George BUCHANAN suggested that the second paragraph should be completed by the following phrase: "Copies of the documents shall be forwarded to the Health Section of the Secretariat of the League of Nations." This clause had already been inserted in the bilateral European Conventions.

These two proposals were adopted.

Article 10.

At the proposal of Sir George Buchanan the following wording was adopted :

“ ... procedure laid down in the International Health Conventions in force ”.

PART II.

ORGANISATION OF THE SYSTEM OF SUPERVISION.

Article 16.

The CHAIRMAN and Dr. LUTRARIO explained that, in practice, what was intended was a sort of theoretical mobilisation and that these measures were only to be put into force should danger threaten.

Article 18.

On the proposal of Professor Léon Bernard the second paragraph was completed as follows :

“ It is recommended that material available on the spot should be used in case of need. ”

PART III.

Article 24.

Sir George BUCHANAN asked that the meaning of the expression “threatened sections” should be defined. He would also like the boundaries of the special section of the waterway regarded as threatened to be clearly defined and notified.

Dr. LUTRARIO quoted the text of Article 9, which he said made this point clear.

Professor Léon BERNARD thought that an attempt should be made to obtain the maximum of scientific accuracy in the wording of this provision. The word “threatened” meant that in the neighbourhood of a section there was danger of contamination. “Affected” indicated a section where one or more cases of infection had occurred. The words “threatened or affected” might be used as in Article 25.

Sir George BUCHANAN accepted this proposal and asked that it should be clearly laid down that the sections in question should be immediately defined, and that notification of the same should be made.

Dr. LUTRARIO pointed out that Article 25 met Sir George Buchanan’s wishes with regard to this last point.

Article 24 was adopted, it being agreed that it should read “in the affected or threatened sections.”

Articles 26 and 27.

Paragraph (b) of Article 26 and Article 27 (e) were amended to read “the International Health Conventions in force.”

CHAPTER II.

Article 29. (Cholera.)

In reply to a question from Sir George Buchanan, Dr. LUTRARIO said that he had wanted to make a clear distinction between “medical observation” as applied to persons who had been in contact with sick persons and who were “under observation” and “sanitary surveillance”, which did not involve isolation in accordance with the definitions of the 1912 Convention.

Sir George BUCHANAN asked that the English text should make this most necessary distinction perfectly clear.

Dr. RAJCHMAN asked whether the last words of paragraph (d) “provided that the period of five days is not exceeded” were really in accordance with bacteriological experience.

Dr. LUTRARIO replied that this expression was in conformity with the 1912 Convention.

Dr. CHAGAS drew attention to the danger of germ-carriers.

Dr. RAJCHMAN thought that it would be better not to lay down any fixed period.

Dr. LUTRARIO said that it had been desired to prevent a sanitary post holding up a vessel indefinitely.

The CHAIRMAN said that this question had been discussed at length and that in practice it was not as important as might be thought at first sight. He thought, therefore, that the wording might be kept as it was.

Dr. LUTRARIO said that he would be in full agreement with Dr. Chagas if no point of view but the purely scientific one were to be taken into account. The question had, however, to be considered from the practical point of view, and where prophylaxis was concerned, it did not appear possible to carry preventive measures to a point which would allow of absolute security being obtained if such security resulted in very serious delays to commerce and to traffic.

Sir George BUCHANAN said that the internal regulations in countries for which travellers were bound could, if necessary, provide that germ-carriers should be subjected to a fresh examination subsequently to the observation carried out at the sanitary station.

The CHAIRMAN thought that it would be possible to accept the five-day period without too great inconvenience being occasioned thereby.

Article 29 was adopted.

Article 30. (Plague.)

Sir George BUCHANAN asked whether there had been many cases in which plague had been transmitted by ships on waterways.

Dr. LUTRARIO replied that it was not possible to say so definitely.

Professor Léon BERNARD said that the first cases of plague which had occurred in Paris about four years previously had been observed in the neighbourhood of a canal at Gennevilliers. It had been thought that the infection had been brought by barges which themselves had been in touch with a ship coming from England. Proof of this, however, had never been obtained.

The CHAIRMAN asked whether it was possible to obtain exact information with regard to the cases of plague which had occurred in Paris.

Professor Léon BERNARD said that the Paris Health Service had taken the necessary measures. There had been two or three stages. Three years before about a hundred cases with a very slight mortality had been noted. The few deaths which had occurred had been of persons whose symptoms had not been correctly diagnosed in time. The epidemic had died out and had then re-appeared the next year as, indeed, had been foreseen. At the moment, a few very rare cases were still notified but there had been no real spread of the disease.

Sir George BUCHANAN asked whether the Ministry could not submit an official statement to the Office international and to the Health Organisation of the League of Nations.

Professor Léon BERNARD said that he saw no difficulty in that. When plague had broken out in Paris it had been recommended that nothing should be said about it. It had been feared that it would cause an economic and commercial disaster. But as might have been easily foreseen, everybody heard about it. The *Matin* had published information concerning the outbreak. No disaster, however, occurred, and nobody was prevented from coming to Paris.

Certain conclusions might be drawn from this. It would perhaps be desirable to modify the International Health Conventions to the effect that when a country took all necessary steps to stamp out an epidemic, it would not be necessary to put all the machinery for international measures in motion. The problem which alarmed countries when they had to notify epidemics was that international measures interfered with their commercial relations. To take such measures in the case of such epidemic or plague would have been absurd, for it was less dangerous than measles or scarlet fever.

At the present time there was a discrepancy between the extent of the measures taken against diseases of the same character as plague and the danger that those diseases represented, since no measures were taken with a view to stamping out certain diseases, the danger from which was much more important and constant.

Dr. LUTRARIO asked whether as regarded Paris the disease observed had not been a form of *pestis minor*.

Professor Léon BERNARD thought that if the necessary steps had not been taken the epidemic might perhaps have become as serious as the epidemics of former times.

Dr. LUTRARIO said that in Italian ports the considerable imports of wheat from all countries of the world made a continual campaign against plague necessary.

Professor Léon BERNARD said, with regard to the official supply of information by the French Government, that he thought that the Health Committee would be all the more entitled to ask for it since the facts had been divulged by the Press.

Article 34. (Typhus.)

Dr. RAJCHMAN asked whether the words "sanitary surveillance" did not involve any sort of isolation.

Dr. LUTRARIO replied that they did not, and that surveillance only implied a daily visit without any other restrictions.

Article 36. (Smallpox.)

Sir George BUCHANAN asked whether paragraph (b) of this article applied to persons who had been in contact with smallpox on shore. This class of case should be dealt with, since it might prove dangerous.

Dr. LUTRARIO replied that Article 26 satisfied the desire expressed. The article stated in a general way, that the measures taken should be calculated to prevent the embarkation of "individuals in the immediate company of such sick persons."

Professor LÉON BERNARD asked whether an article should not be inserted allowing of another disease being added to the list.

Dr. LUTRARIO replied that Dr. Chodzko and himself had great difficulty in getting smallpox and exanthematic typhus accepted by the Office international d'hygiène publique. Regard should always be had to commercial considerations which prevented the addition of a disease to the list, being readily accepted.

Professor LÉON BERNARD said that he was thinking more particularly of meningitis.

The Committee adopted the draft Convention as a whole subject to the above-mentioned amendments.

The CHAIRMAN said that he desired once more to thank Dr. Lutrario and Dr. Chodzko for their admirable work.

Dr. RAJCHMAN suggested that the draft should be sent by post to the three members representing the Transit Committee so that they could consider it before the meeting of the Mixed Committee.

Agreed.

42. Continuation of the Discussion on the Report of the Epidemic Commission.

Dr. CHODZKO made a statement with regard to health conditions in Poland. His impression was that the great epidemics which had been threatening that country the previous year were coming to an end. He quoted certain figures to prove this point. In 1922 there had been 42,785 cases of exanthematic typhus with the maximum number of cases in February, namely 2,116 per week. In 1923 the maximum number was observed in March, when there were 542 cases per week, and the total number of cases up to the middle of April was only 6,231; there was reason to expect that it would not be more than from 9,000 to 10,000 during the whole year.

The difference was still greater in the case of relapsing fever. There had been 41,211 cases in 1922 with a maximum of 3,204 per week. In 1923 the maximum was only 139 cases per week. There was reason to think that relapsing fever would altogether disappear during the current year.

As for exanthematic typhus, a special campaign would be carried out during the next winter and spring with a view to suppressing the endemic breeding grounds of this disease which still existed throughout the country. It was hoped that by the end of 1924 or the beginning of 1925 sanitary conditions might be obtained which would be comparable to those of western nations.

This improvement was due primarily to the fact that the movement of immigration on the part of persons repatriated from Russia had considerably decreased. The two large stations which had been established at Baranowicze and Równe had received more than 283,000 repatriated persons in 1922. At the moment there were only about 3,000 refugees arriving there each month, and it had thus been possible to suppress the Równe station since May 1st. Should the movement still further decrease, the danger would lessen proportionately so far as typhus and relapsing fever were concerned.

Unfortunately, another scourge threatened, namely malaria, an enormous breeding ground for which had been created at Moscow. In 1922 there had been more than 1,600,000 cases in Russia including many cases of tropical malaria among Russian peasants repatriated from Turkestan. In certain districts the mortality was as high as 85%. It was therefore necessary that a watch should be kept in the direction of Russia. The danger to Poland and to the rest of Europe also was all the more threatening in view of the fact that to the East of Poland there lay the large district known as Polesia with the Pinsk marshes, which were an endemic breeding ground for malaria.

As for cholera, the diagrams that had been communicated to the Committee showed that Russia was still an endemic breeding ground for this infection. During the 19th century Poland had had to suffer from the fact that she was a neighbour of Russia. Cholera had been almost permanent.

Out of three and a half millions of inhabitants in former Russian Poland, the incidence of disease in 1851 had amounted to 130,000 cases with a mortality of 48,000. For this reason Dr. Chodzko had great pleasure in welcoming the scheme for an enquiry into cholera in Russia. This matter was of primary importance, not only for Russia, but also for all countries bordering on Russia, and for the whole of Central and Western Europe. Dr. Chodzko closed his speech with a tribute to the action of the Epidemic Commission in Poland. The Polish Government would show its gratitude to the League of Nations at the moment, which was not far distant, when the Secretary-General arrived in Poland.

The CHAIRMAN thanked Dr. Chodzko for his statement and was very glad to learn of the progress that had been made in Poland.

43. Enquiry into Scleroma : Proposal by Dr. Lutrario.

Dr. LUTRARIO said that he had recently met Professor von Schrötter of Vienna University, and had drawn his attention to the serious danger threatening several European countries as a result of the spread of scleroma. Professor von Schrötter had already made a proposal with regard to this matter at the International Conference at Warsaw. He had raised the question of the advisability of convening an International Conference to consider methods of combating this disease. At the moment such a Conference would be premature. It might, however, perhaps be advisable for the Health Committee to instruct a Sub-Committee to enquire into the spread of scleroma in various European countries, and to collect information with regard to its clinical characteristics, its patho-genesis and anatomy-pathological lesions, and therapeutics, particularly of a serological nature, and the manner in which it was contracted and transmitted.

Dr. CHAGAS said that in Brazil there were perhaps a dozen cases of scleroma, but that there were a good many cases in Chile.

Dr. CHODZKO said that some years previously Professor von Schrötter had showed him a chart of the spread of scleroma. In Poland, notification of this disease had been compulsory for the last 6 months.

Dr. RAJCHMAN begged Dr. Lutrario not to insist on his proposal exactly as it stood. Professor von Schrötter's proposal, as it had been brought forward at Warsaw and in several letters which the Secretariat had received, even recently, went somewhat further. He wished to obtain financial assistance from the League of Nations for the Conference which he desired to convene in Vienna. This would be difficult, if not impossible. On the other hand, the problem was very interesting. He did not know, however, whether it was sufficiently important and urgent necessarily to involve the appointment of a Sub-Committee. It might perhaps be sufficient if the Secretariat were instructed to collect such information as existed and to submit a report when the Health Committee next met.

This proposal was adopted.

44. Recommendation that a Relief Fund should be created to meet Emergencies.

Sir George BUCHANAN said that at the end of the last meeting Dr. Rajchman had asked him to prepare a text of his recommendation concerning the creation by the League of Nations of a permanent fund intended to meet urgent needs in case of an exceptional spread of epidemics.

The recommendation would read as follows :

“ The Committee :

(1) Notes with approbation the useful work which has been carried out by the Epidemic Commissioners since the last session of the Committee and in particular in connection with the serious outbreaks of infectious diseases which have occurred among the refugees in different parts of Greece.

(2) Notes also that it would have been impossible to carry out much of the work referred to without the sum which Dr. Nansen was able to hand over to the Epidemic Commission and that the outbreaks in question could have been combated with still greater success had other funds been also available for the Commission at the earliest stage ;

(3) Considers that this recent experience, together with the experience of the whole of the work of the Epidemic Commission since its inception, demonstrates that if the Epidemic Commission is to be placed in a favourable position to deal with unexpected risks of spread of infection arising from sudden calamities or disasters affecting large populations, it should at least have some funds, not necessarily large, which can be drawn upon for immediate use when these conditions arise ;

(4) Begs the Council to consider fully and favourably any proposal which would ensure that a small fund is kept by the League at the disposal of the Commission for emergency work to be utilised for the prevention of the spread of epidemic diseases in exceptional instances where such measures are suddenly called for alike in the interests of the public health of the world and for the strengthening of the public health organisation of countries which may require immediate assistance.”

The recommendation was adopted.

45. Adoption of the Medical Director's Report.

The CHAIRMAN said that the Committee had adopted the various parts of the Medical Director's report. The report as a whole should now be adopted.

Dr. LUTRARIO suggested that it should be stated that the Health Committee was adopting the report with the greatest satisfaction and paying a tribute to the remarkable work accomplished by its author. The Health Committee had before it an altogether new field of work on problems of international health. Results which would be beneficial to everyone were to be expected. The Medical Director should be warmly congratulated for his remarkable assistance.

Dr. RAJCHMAN replied that he was much touched by the kind words that had been addressed to him.

Sir George BUCHANAN called attention to the rules of procedure that had been approved in the previous summer. He knew that it would be difficult to follow them exactly, but still an effort should be made with regard to certain points. This was particularly the case with regard to the distribution of documents. It would be desirable that they should be circulated some time before the sessions of the Committee. Furthermore, whenever a new member was appointed to a Sub-Committee, all the members of the Health Committee should be officially notified. In the same way all members of the Committee should be informed of appointments made in the Health Section.

As regarded distribution of documents, the Committee had accepted a proposal that they should be numbered. But this was not enough. Whenever a document was sent to a member of the Committee, it should be accompanied by a covering note giving a summary of the sources from which the document was derived, and showing the reason for which it was sent, and what reply was required from the member receiving it.

Dr. RAJCHMAN replied that the rule was that documents should be distributed if possible three weeks before the meeting of the Committee. The Medical Director's report had been finished on April 26th. The Director had left for Washington on the 28th. Had he remained at Geneva his report would not have been completed before May 1st, since he would have desired to give a summary of the work accomplished which should cover the period up to the most recent date. The report was circulated on May 8th. The session of the Permanent Committee of the Office international had begun on the 14th, and there had been some difficulty in circulating the report to the members of the Committee before their departure for Paris. For this reason it had been arranged that all reports should arrive in Paris during the session. It was true that the reports were somewhat lengthy. This was perhaps due to the volume of the work accomplished. It was difficult to promise that, in the future, documents would be distributed sooner.

The Committee generally met at intervals of four months, say every 17 weeks. The work of the Secretariat recommenced about a week after the session. If a deduction was made of the three weeks which were to elapse between the distribution of the reports and the opening of the next session plus a week for the printing of the reports and their despatch by post, the reports would only cover the activities of about twelve weeks.

With regard to notification of appointments of members to Sub-Committees, there had been no exception, save the accidental one, in respect of the Budget Sub-Committee which Dr. Rajchman had explained at the first meeting. As for appointments in the Health Section, all permanent appointments were notified. This had been done in the case of Dr. Knaffl-Lenz. Other nominations had not been notified because they had not been finally passed by the Secretariat Appointments Committee. The Medical Director was in constant communication with the Chairman with regard to appointments.

With regard to the circulation of documents between sessions, Sir George Buchanan had asked that these documents should be accompanied by explanatory covering notes. Dr. Rajchman referred to the documents which had been distributed between the last session and the present one; all these documents explained themselves and needed no covering note. There was only one exception, owing to a mistake. Dr. Jitta's proposal with regard to interchange with the Netherlands had been distributed. It was quite understood that in the case of special documents with regard to which it would be important to have the opinion of the members of the Committee, such documents should be accompanied by an explanatory covering letter.

Sir George BUCHANAN asked that nevertheless some details should be given when it was thought useful; for instance, in the case of the circulation of Dr. Carozzi's report, it would have been advisable to give the date of the decision as a result of which that report was submitted. A reference might also have been made to other documents dealing with the question. Finally, some indication might have been given as to what was required from the members to whom this document was circulated.

Dr. RAJCHMAN replied that the Secretariat would be very glad to follow the suggestions of Sir George Buchanan and to do anything which might make his task as a member of the Health Committee more easy.

The Medical Director's report was adopted.

The PRESIDENT supported what Dr. Lutrario had said with regard to the sincere thanks to be addressed to the Medical Director for the work which he had accomplished. The greater part of the task of the Health Committee fell on his shoulders and the success which the endeavours of the Health Committee had hitherto met with were due to him.

46. End of the Session.

The CHAIRMAN was glad to see that in spite of the absence of several members the session had produced valuable results. The Committee was particularly glad of the presence of the American representatives, Dr. Cumming and Dr. Chagas. In future, it would perhaps be necessary to hold at least two sessions a year at which members of countries outside Europe would be present. Arrangements for this might perhaps be possible. He feared that Dr. Chagas, for instance, might not be able to be present at all the sessions, but he would be prepared to return every spring.

Dr. CHAGAS thanked the President for his kind remarks. He was returning to his country convinced of the great value of the International Health Organisation, and his Government would be very glad to receive all communications from the Committee and would endeavour to find a solution of the administrative problems affecting the prevention of diseases.

The CHAIRMAN said that amongst the valuable work accomplished by the Committee, attention should be drawn to the scheme prepared by the Mixed Committee with regard to the Health Organisation of the League of Nations, and the question of information concerning health. The Committee was very glad to have had Mr. Sydenstricker's collaboration.

After an exchange of remarks between the Chairman, Sir George Buchanan, Dr. Lutrario and Dr. Rajchman, the Health Committee declared that the Chairman should be left to fix the date of the next session.

Dr. LUTRARIO, in his own name and that of his colleagues, thanked and congratulated the Chairman for the remarkable skill with which he had presided over the Committee's debates.

The CHAIRMAN declared the sixth session of the Health Committee at an end.

Annex 1.

AGENDA OF THE SIXTH SESSION

approved by the Committee on May 26th, 1923.

- (1) Report of the Medical Director.
 - (a) Report on the work of the Health Section.
 - (b) Memorandum concerning permanent Health Organisation of the League. Resolution of the Council of January 30th, 1923, regarding the appointment of a special mixed Sub-Committee, composed of an equal number of members of the Health Committee of the League of Nations and of the Office International to prepare a scheme for the constitution of the Permanent Health Organisation.
- (2) Budget of the Health Organisation for 1924.
- (3) Report of the progress of the preliminary work of the Service of Epidemiological Intelligence and Public Health Statistics.
- (4) Report on the Research work concerning the Standardisation of Sera and Serological Tests and the Standardisation of Biological Products.
Rapporteur : Professor Madsen.
- (5) Report on the activities of the Temporary Epidemic Commission.
- (6) Reports concerning the Interchange of Public Health Personnel.
 - (a) Memorandum concerning the continuation of the 1923 Interchange and a tentative programme for 1924.
Rapporteur : M. Velghe.
 - (b) Report on the Second Collective Interchange in Great Britain.
Rapporteur : Sir George Buchanan.
- (7) Report on the progress of the work of the Waterways Sub-Committee.
Rapporteur : Dr. Lutrario.
- (8) Report on the progress of the work of the Opium Sub-Committee.
Rapporteur : Dr. Carrière.
- (9) Interim Report of the Expert Committee on Sleeping Sickness and Tuberculosis.
Report to be presented by Dr. Andrew Balfour, Chairman of the Expert Committee.
- (10) Statement concerning the activities of the Industrial Health Service of the International Labour Office.
Rapporteur : Dr. Carozzi.
- (11) The appointment of a delegation to represent the Health Committee at the Pasteur Centenary Celebrations.
- (12) Enquiry regarding Cancer. — Note by Sir George Buchanan.
- (13) Enquiry regarding Malaria. — Note by Sir George Buchanan.
- (14) Miscellaneous :
 - (a) Resignation of Dr. Miyajima. Appointment of new member.
 - (b) Training courses in Eastern Europe. Anti-Epidemic Museums.
 - (c) Further correspondence with Pan-American Sanitary Bureau.
 - (d) Letter from President of the World's Dairy Congress.
 - (e) Letter of the International Union against Venereal Disease.
 - (f) Invitation from the League of Red Cross Societies to be represented at the Second Oriental Red Cross Conference to meet in Manila, at the beginning of 1924.

Annex 2.

REPORT OF THE MEDICAL DIRECTOR ON THE WORK OF THE HEALTH SECTION FROM THE END OF JANUARY TO THE END OF APRIL 1923.

(1) *Resolutions of the Council on the Work of the Health Committee.*

I had the honour to circulate on February 9th the Resolutions taken by the Council of the League of Nations on January 30th, 1923, on the Work of the Fifth Session of the Health Committee.

As the members will no doubt remember, the Council in adopting all the Resolutions proposed by the Health Committee made certain additional observations. Further, the Council

decided to recommend the formation of a special mixed committee for the preparation of a scheme for the constitution of the Permanent Health Organisation of the League. This resolution is referred to in a special memorandum which I have the honour to circulate simultaneously.

The members may remember that last year it was the representative of France who acted as rapporteur for all questions of health. At its last meeting the Council selected new rapporteurs for the current year, and the representative of Japan, H. E. M. Adatci, has agreed to act as rapporteur on health questions.

The Council on the 17th April adopted three resolutions concerning your activities. In the first place M. Adatci has been appointed to represent the Council at the forthcoming celebrations of the Pasteur Centenary. The Health Committee will remember that on this occasion M. Adatci is to be accompanied by a delegation of the Committee to be nominated at your next session.

M. Adatci referred to the communication received from the President of the "World Dairy Congress". On his proposal the Council adopted the following resolution :

(1) "That the Secretary-General be authorised to convey to States Members of the League of Nations such information as may seem useful in connection with the Conference ;

(2) "That the Health Committee be requested to give such co-operation as they may find practicable to the Conference in all technical matters within its competence".

On M. Adatci's proposal, the Council decided to appoint Dr. Uchino as member of your Committee in the place of Professor Miyajima, who cannot return to Europe for a considerable time. Professor Miyajima communicated his decision both to your Chairman and to the Secretariat of the League. Dr. Uchino, who now succeeds him, is a Director of the Bureau of Epidemiology of the Department of Home Affairs, and is a very prominent public health expert.

I had the honour to circulate on April 16th the correspondence exchanged between the Secretary-General and Surgeon-General Cumming and I am sure the Committee were glad to learn that Dr. Cumming has assented to assist the Committee in an advisory capacity.

(2) *Interchange.*

(a) *Collective Interchange.*

Sir George Buchanan will present to the Committee his views on the results of the first part of the Collective Interchange which has taken place in Great Britain, while M. Velghe will perhaps present in his report to the Committee a programme of the Interchanges for next year.

The second Collective Interchange has proved a great success. Medical officers from the following countries took part :

Austria.	Hungary.	Russia.
Belgium.	Italy.	Serbia.
Czechoslovakia.	Japan.	Sweden.
Denmark.	Norway.	United States.
Finland.	Poland.	
France.	Roumania.	

They arrived in London on the 24th February and remained in England until April 11th, arriving in Vienna on the 13th April.

The presence of two prominent members of the Public Health Service of the United States of America was particularly gratifying. Three French Medical Inspectors were commissioned by the Government of the Republic and five British Medical Officers are participating in the second part of the interchange in Austria.

The Committee will remember that it was agreed to test once more the advisability of holding a collective interchange in two countries. I shall submit during your Session a supplementary report on the results of the second part of this interchange which is taking place in Austria and which will only end a week before your session. I may, however, be allowed to state at once that experience has fully confirmed the views of the members of the Health Committee who proposed at the last session to limit the experience to one country only. A very full programme was prepared both for Great Britain and for Austria, and at the end of the first part, the medical officers already felt the strain of six weeks' intensive work. It was not possible for them to study carefully the numerous documents which had been distributed in the course of their studies. Their experience during the second part of the interchange was similar. I believe that the organisers of the British interchange, to whom the Health Committee are under a very particular obligation for the thoroughness with which they prepared this part of the visit, would agree that on future occasions it will be necessary to give more time to the period of practical study in the provincial areas. I ventured to propose at first that this period should not be less than one month, and it is only by compromise that three weeks were finally adopted. It has now been agreed that this period should be greatly prolonged and I should like to suggest that the Health Committee should recommend three months as the minimum period of practical apprenticeship.

A good many lessons have been learnt from the four successive experiments of the collective interchange, and there is, I believe, complete unanimity as to the necessity of allowing the organisers to make their preparations fully six months before the visits start, and on the other hand, of notifying the Public Health Administrations of the programme in its details some four or six months in advance. It is, moreover, almost indispensable to circulate simultaneously the documents which should be studied by the medical officers before they leave their homes. The Committee will perhaps agree that it was not possible to adopt this method during the first experimental year, but should you decide on a programme for the whole of 1924, it would enable us to act on the lines indicated.

It is also necessary to obtain nominations from the Public Health Services some four to six months in advance. It would be highly desirable to have ample time to communicate direct with the officers selected, and if possible to establish personal contact with them so as to make clear to each of them the scope and nature of the interchange. Such conversations would also enable the final choice of the candidates to be made by the Public Health Administrations after consultation with the organisers. Should a general plan for next year be adopted at this session, I would endeavour to arrange for a provisional plan of the interchange to be worked out in conjunction with the Public Health Services of the countries to be visited in time for submission to the next meeting of the Health Committee.

I beg to circulate in Appendix 1 a most attractive and interesting programme which has been prepared by the President of the Dutch Board of Health for the approval of the Committee.

May I be allowed to suggest that in the preparation of a standard programme special stress should be laid on the necessity of a systematic arrangement of the lectures, conferences and visits of inspection, as well as on the necessity of avoiding visits to institutions of secondary importance. The programme might perhaps conform to the following plan :

- (1) In preliminary conferences held in the capital of the country, the principles of public health administration and the legislation would be explained. The foreign medical officers having studied the documents in advance would be able during discussion to obtain supplementary information and thus gain definite knowledge of the system of sanitary administration which they are about to study in its practical working.

- (2) They would follow a systematic study of the main divisions of public health work. It should be sufficient to demonstrate the working of representative institutions under each of these divisions. Thus, for example, it should be sufficient to examine in detail the working of one type of tuberculosis dispensary, or child and maternity welfare centre, etc.

- (3) The public health aspect should be steadily kept in mind and in visiting sanitary institutions, particular attention should be paid to the administrative side. It is, for example, the cost of the construction of the hospital, the way it is financed, and the details of its organisation which matter more than the clinical features of its work. Similarly, in visits to bacteriological institutes, calf-lymph establishments, analytical laboratories, attention should be paid mainly to the place they occupy in the general system of public health administration rather than to special characteristics of their professional activities.

- (4) The system of health insurance and of factory inspection, including industrial hygiene, should be given the same place as other fields of public health activities.

- (5) Ample opportunities should be given for closer and more detailed study of the daily routine of the public health offices to which individual foreign visitors are attached for the period of apprenticeship.

(b) *Specialised Interchange.*

In accordance with the decisions of the Fifth Session of the Committee, steps have been taken to prepare a special course for malaria in Italy and an interchange between senior bacteriologists in public health laboratories.

I had the honour to circulate on April 4th to all members a detailed programme for the study of the malaria campaign in Italy (Document C. H. 73) and I am very glad to inform you that eleven countries are taking part, while numerous very prominent specialists have been commissioned by their respective administrations for the purpose, among them one Albanian, three Russians, one Spaniard, one Portuguese, one Dutchman, two Bulgarians, two Poles, one Greek, one Yugoslav, two Germans and one American.

As the study will be in progress at the time of your Session I shall circulate to the members a memorandum on its results by the end of June. The Committee will also have the advantage of a note from one of its members who intends taking part in this interchange.

The interchange of laboratory workers is the first example of individual arrangements. Experience has shown that it is much more difficult to organise such individual exchanges, and in fact the system has only been tried in a few instances.

The following representatives of Public Health Institutes have been nominated : two Americans, two Poles, one Dane, one Belgian, one British and one German.

Correspondence is still being exchanged with all the remaining countries so that it will be necessary for me to give supplementary information during the Session as to the final arrangements made.

I would venture to suggest that the Committee might recommend a more extended trial of the system of interchanges for specialised officers, both on the model of the collective type adopted for malaria in Italy and the semi-individual arrangements for the laboratory exchanges. It will be necessary to evolve in time a definite system which will be obviously very beneficial to a large group of officers, who are either ineligible for the general interchange or who would profit more both individually and from the point of view of their own public health services if they were given an opportunity of a more detailed study of their own special subject. While experience has shown that it is better to limit the general interchange to the study of public health conditions in one country only, it is obvious that investigations of special subjects will be much more useful if conducted in a series of countries. For instance, school medical inspections or methods adopted in the campaign against venereal diseases might be very usefully studied by a limited group of specialists in four or five countries, successively, according to a pre-arranged plan. The reports which the specialised officers would present to their own administrations might prove very valuable if published for the benefit of all the public health administrations.

(c) *Individual Fellowships.*

The special Sub-Committee appointed by the Chairman will perhaps examine during this Session the applications received. May I suggest that the Committee before deciding finally on the number and type of individual fellowships to be granted in 1924 should consider the information which Dr. Norman White will doubtless place before it after his return from the Mission to the Far East. This type of interchange is obviously best suited for the distant countries and very interesting suggestions have already been placed before the Sub-Committee, who will no doubt desire to report on them at the Session.

(d) *American Interchange.*

I am informed that the United States Public Health Service are preparing, in conjunction with the International Health Board of the Rockefeller Foundation, a plan for the third collective interchange which, in accordance with your previous decision, is to take place in America. I shall present a supplementary report on this subject to the Session after my return from Washington.

(3) *Service of Epidemiological Intelligence and Public Health Statistics.*

Mr. Edgar Sydenstricker took charge of the Service at the end of January. I am anxious to express here my great indebtedness to the Chiefs of the Public Health Services who have conferred with Mr. Sydenstricker and given him information on the work and development of their services. Conferences were held in London with Sir George Newman, Sir George Buchanan, the Registrar-General, Dr. Stevenson, Dr. Greenwood, and Colonel James. M. Velghe took great interest in the work of the service and he arranged for a very detailed discussion between M. Jacquart, the Director-General of the Statistical Service of the Ministry of the Interior and of Health of Belgium, and Mr. Sydenstricker.

Mr. Sydenstricker has also had consultations with the leading officials of the Ministries of Health and of the Central Statistical Offices in Czechoslovakia, Poland, Hungary and Austria. He is particularly indebted to the following gentlemen who spared no trouble to give and help him to obtain information concerning the questions he had come to study :

In Prague.

Ministry of Health

Dr. Kolinsky.
Dr. Kulhavy.
Dr. Hrdliczka.
Dr. Kucera.
Dr. Semarad.
Dr. Pelc.

Central Statistical Office

Dr. Mráz.
Dr. Kollar.
Dr. Bohac.
Dr. Netusil.

In Warsaw.

Dr. H. E. Chodzko assisted Mr. Sydenstricker in his enquiries and the following gentlemen were very helpful :

Ministry of Health Statistical Service
of the City of Warsaw

Dr. Ciaglinski.
M. Limanowski.

Central Statistical Office

Dr. Szulc.

Ministry of Education

Dr. Szmurlo.

In Budapest.

M. Emile de Grosz spared no pains to further Mr. Sydenstricker's work ; he also saw the following gentlemen :

Ministry of Welfare
Central Statistical Office

M. Fay Aladar.
M. Aloys Kovacz.
M. de Dobrivits.

In Vienna.

Mr. Sydenstricker received assistance from the following :

Central Health Office

Central Statistical Office

Dr. Helly.
Dr. Rosenfeld.

Mr. Breiski.
Hofrat Hecke.

His visit to Italy, which has been very kindly agreed to by Dr. Lutrario, has had to be postponed until after the Session of the Health Committee in view of my prolonged absence from Geneva.

As I explained to the Health Committee at their last Session, the work of the Service had to be limited at first to a preliminary enquiry. It is obviously necessary to study in the first place the methods of collection of the statistical material on epidemiology and Public Health, and in the second place to obtain all the available returns before formulating definite proposals to the Committee. This preparatory work has been begun. A letter was addressed to directors of Public Health and prominent authorities in most European countries inviting their co-operation in the drafting of a report within a short period of time, on the basis of a memorandum which I circulated in its provisional form to all the members of the Committee in February last. The memorandum in the form in which it was enclosed with the circular letter is annexed to my report (Appendix 2). It is expected that all the reports will be received in the course of the next two months and the Committee will be gratified to learn that all our requests have been acceded to and thus a most valuable and unique collection of reports will be at the disposal of the Committee. Simultaneously steps have been taken to complete the collection of all the official returns of infectious diseases which are published by the European countries. By arrangement with the United States Public Health Service, information issued by that Department will reach Geneva at the same time as it is published in Washington.

It was found after analysis of the material thus obtained that it would be possible to present in a systematic form complete information of the incidence of infectious diseases for the year 1922, in all European countries with one or two exceptions. The results of this analysis will be circulated in print to all the Members, so that the Committee may judge at its next Session of the value of this publication which will not be issued until approved by the Committee. The Committee may find that the volume presents very useful information, and indeed it is one of the primary duties of the Service to circulate for the information of the Public Health Administrations a summary of the data regularly forwarded to this office.

It is hoped that one or two reports embodying the results of the "Sanitary Survey" referred to may be available for publication very shortly. The information so obtained will be supplemented by more detailed study of the local conditions in various countries. A comparison of the information obtained will probably necessitate further enquiries, and the services of two officers have been secured for this purpose.

The information gathered from and as a result of the "Sanitary Survey" will serve as a basis for a further and more detailed study of the best methods of returning and circulating epidemiological intelligence and public health statistics.

The investigation of practical problems of public health statistics and epidemiology cannot be confined, however, to the "clearing house" work of the small expert staff in Geneva. It will be necessary to invite as soon as possible the co-operation of experts and institutes of medical research in the various countries. As a first step in this direction an invitation has been issued to and accepted by Dr. Greenwood in London, who has already undertaken a systematic study of vital statistics of three European countries.

The Committee will have an opportunity of discussing at the session with Mr. Sydenstricker all details of his work.

(4) Study of Social Hygiene and Public Health.

The Committee instructed me at the last session to collect information on the arrangements made in universities of Europe, America and Japan for the teaching of public health and preventive medicine. I have invited prominent experts in various countries to prepare a full report for the information of the Committee. I am glad to inform the Committee that numerous acceptances have been received, and the co-operation of such leading men as Sir George Newman in England, Professor Léon Bernard in France, and Surgeon-General Cumming of the United States has been secured. I hope to be able to circulate their reports to the Committee in June or July (Appendix 3).

(5) *Tropical Diseases.*

The report of the Expert Committee on sleeping sickness and tuberculosis in Equatorial Africa has now been completed and should soon be ready for circulation to the members. Its early preparation is due to the very assiduous work of all the members of the Committee, and, in the first place, to the untiring efforts of Dr. Bagshawe and the Chairman, Dr. Andrew Balfour, who may be present in Paris during the session of the Committee and who would be ready to place himself at your disposal for any further information or drafting of any recommendations which you may desire to make. The members of the Committee may perhaps be ready to make a special recommendation to the Council as to action to secure international co-operation in the fight against these two diseases.

(6) *Far Eastern Enquiry.*

The Far Eastern Mission of Enquiry entrusted to Dr. Norman White is proceeding very satisfactorily and I am glad to inform the Committee that Dr. Howard F. Smith was commissioned by the United States' Public Health Service to accompany Dr. Norman White on part of his journey. Dr. Smith has now rejoined his post at Manila while Dr. Norman White is at present on his return journey from the Chinese ports to Europe via India. His itinerary so far has been as follows: Aden, Colombo, Penang, Tung Song, Sarath, Chumpon, Bangkoj, Singapore, Batavia, Weltevereden, Tandjong-Priok, Bandoeng, Djokakarta, Wonosof, Magelang, Setjang, Garoeng, Samarang, Ambarawa, Soerabaja, Soerakarta, Djokja, Buitenzorg, Hong-Kong, Shanghai, Kobe, Tokio, Formosa, Korea, Dairen, Kyoto, Osaka, Mukden, Pekin.

Dr. Norman White was afforded everywhere all possible facilities for his inspections and the welcome given him in Japan was particularly cordial. He is expected to return by the middle of June, and his report will be ready for submission to the Health Committee before your seventh session.

(7) *Sub-Committee on Waterways.*

The Sub-Committee on Waterways will meet on May 10th, when the very important and detailed proposal of Dr. Lutrario will be considered.

On the 18th April I circulated to the members his report, and the minutes of the previous meetings were addressed to the members on March 1st. A very valuable report was also obtained from Dr. Breger and this has been placed at the disposal of all the members of the Committee interested in the question.

The Sub-Committee will doubtless present a report on its work at the session, when Item No. 7 of the provisional Agenda is considered.

(8) *Opium Sub-Committee.*

I circulated to the members on March 1st a memorandum concerning the appointment of Professor Knaffl Lenz. He has placed himself at the disposal of the Chairman of the Joint Opium Sub-Committee. He had a very full discussion with Dr. Lutrario. Dr. Carrière will doubtless inform the members of the Committee of the proposed plan of enquiry drawn up by Professor Anselmino, as rapporteur of the Joint Opium Sub-Committee. The preparation of the report on the basis of the four methods recommended by the Health Committee present certain difficulties, and at present steps are being taken to test the applicability of those methods on two or three representative samples of population in different countries. The Committee may desire to obtain from me further information when the report of Dr. Carrière comes under consideration.

(9) *Publication of Reports presented to the Serological Conference in Paris.*

The reports are being issued as an ordinary publication of the Health Organisation of the League. The revision of the French edition has been undertaken by Professor Louis Martin, of the Pasteur Institute, while Sir Walter Fletcher has arranged that the revision of the papers by the British authors will be undertaken by the Medical Research Council. The reports will be distributed in accordance with the decision of the last Session of the Health Committee which met with the approval of the Council.

(10) *Sanitary Courses in Eastern Europe and Anti-epidemic Museums.*

Special courses held in Warsaw, Moscow and Kharkov in execution of the recommendations of the Warsaw Health Conference and with the generous financial support of the League of Red Cross Societies have proved very successful.

The courses at Warsaw were attended by 60 doctors attached to official health services, those at Kharkov by 65, and those at Moscow by 49 doctors, preference being given to members of the staffs of public health administrations in places as remote as possible from the Government centres.

The official records of these courses are annexed to this Report (Appendix 4).

A noteworthy feature of these courses was that foreign lecturers took part in them. For instance, Prof. Liston came to Warsaw from England, Professor Cantacuzène from Roumania, and Professor Abel from Jena, and each of them gave several lectures. Professor Abel also went to Kharkov and Moscow.

At Warsaw a specialist course for nurses was organised in addition to the course of doctors. The thirty nursing sisters who attended were selected by the Polish Chief Epidemic Commissariat for the campaign against epidemics, and on completing the course were sent by the Commissariat as assistant instructors to epidemic diseases hospitals.

The Health Committee will remember that the financial support of the League of Red Cross Societies is represented by a sum of £5,000 which was placed last year at the disposal of the Committee for this purpose. Since your last Session details of procedure for drawing on these funds were arranged with the Director-General of the League of Red Cross Societies. The recommendations as to the disposal of this sum are presented by a small Advisory Committee consisting of Professor Santoliquido, Dr. Humbert and the Medical Director of the Health Organisation. On receipt of these recommendations, and unless there be disagreement in the Advisory Committee, the plans formulated jointly by the members of the Advisory Committee and approved by the Health Committee would constitute full authority for the disbursement of the grants.

The Committee met in March and held long discussions with Dr. Pantaleoni, our Epidemic Commissioner in Moscow, who presented a very detailed statement as to the great utility of the two courses. He emphasised the fact that great stress was laid by the Public Health authorities in Moscow and Kharkov on the desirability of holding new courses. The Polish Ministry of Public Health also requested an early repetition of the courses. In the circumstances the Committee has recommended that the following estimates be adopted for work in 1923 :

1. Grant towards new courses in Warsaw, Moscow and Kharkov	£
at £400 each.	1,200
2. Honoraria of travelling expenses of various lecturers	350
3. Grant-in-aid towards the establishment of three anti-epidemic museums	750
	<hr/> £2,300

It has also been decided at the special request of the Public Health Services concerned to secure the co-operation of foreign lecturers. The following gentlemen have been invited :

Dr. Breger, of the Reichsgesundheitsamt in Berlin (lecture on sanitary control of water traffic).

Dr. Gosio, of Rome (lecture on the malaria problem).

Dr. Hrdliczka, of Prague (lecture on epidemic problems of Czechoslovakia).

Dr. Sergeant of the Pasteur Institute in Algeria has also been invited, and I shall communicate his reply to the Committee in a supplementary report.

It has been possible to arrange for an interchange of lecturers between Russia and the Ukraine and Poland. Dr. Barakine, Professor of Hygiene, has lectured in Warsaw, while Dr. Lewitt, Deputy Epidemic Commissioner of the Polish Government, will go to Kharkov and Moscow.

Two Czechoslovak medical officers have been commissioned by the Ministry of Health in Prague to take part in the course in Warsaw. The Warsaw course started on the 15th April, while the Kharkov and Moscow courses will begin in June.

The Committee instructed me at their last Session to place an order with the Dresden Museum of Hygiene for specimens for the three anti-epidemic museums to be organised in connection with the courses. I have obtained an expert report on the working of the museum which has been submitted by me to your Chairman. After consultation with the Advisory Committee it has been decided that a nucleus of the three museums would be provided for out of the grant-in-aid, while the development of the museum should be left to the Public Health authorities of the three countries. The order was placed accordingly for three sets of specimens in Dresden and I shall be glad to give all the necessary details to the Committee, should they desire me to do so.

A sum of £800 has been left as a reserve for further work in 1924. The practical co-operation thus effected with the League of Red Cross Societies is most gratifying.

(11). *Conference of Red Cross Societies of Eastern Europe held at Warsaw, 9th to 13th April.*

On the nomination of your Chairman I had the honour to represent the Health Committee and the Secretariat at this Conference. Unfortunately pressure of work caused by my visit to Washington prevented me from being present for more than the first two days of the Conference. At the request of its organisers, I presented a report to the Second Sub-committee of the Conference on the epidemic situation in Europe, and on the work the Red Cross organisations might do in the fight against epidemics in peace time. My suggestions met with general acceptance. The Conference shared the opinion that the fight against epidemic diseases is essentially the duty of Government and Public Health authorities and that the Red Cross Societies should only intervene at the request of the authorities when their efforts might usefully supplement the normal work of the health services of the country.

These views were embodied in the annexed Resolution (Appendix 5).

(12) *Vaccination in Russia.*

During your last session, at a meeting of the Special International Commission, Dr. Siemashko, the Health Commissioner of Russia, invited the help of the Committee in the appointment of an expert to co-operate with the Russian scientists in carrying out the test as to the reliability of the intestinal vaccination.

Sir William Leishman was nominated at that meeting and his co-operation was gladly accepted by Dr. Siemashko.

Sir William Leishman has definitely accepted this invitation on the condition that he will be assisted in his work by Professor Perry, who would continue to act, should pressure or urgent work prevent Sir William Leishman from a more active participation.

The Russian scientists have appointed a special commission which has expressed its strong desire to co-operate with its Western colleagues. At the suggestion of Sir William Leishman, Professor Besredka was invited to join the Expert Committee.

No detailed plan of the vaccinations has reached us yet, but I gather that it is proposed to begin the experiment early in May, both in the army and amongst the medical personnel and the railway officials, who are more particularly exposed to danger. It is intended to test simultaneously the efficiency of the method as applied to cholera, enteric fever and dysentery. As soon as the detailed plan is received, a meeting will be convened in London, and it is hoped that, in addition to Sir William Leishman, Professor Besredka and Professor Perry, the Russian scientist representing the Moscow Vaccination Commission will also attend.

The Committee will remember that Dr. Siemashko referred to the necessity of supplying the experimental vaccine to the Health authorities responsible for the carrying out of the test. In the Minutes of the Session the vaccine was referred to as being prepared by the Pasteur Institute. A regrettable mistake has occurred, as this vaccine is not manufactured by the Pasteur Institute, as explained in the annexed letter by Dr. Roux to your Chairman (Appendix 6). It is also clear, as Dr. Siemashko points out in his reply, that he did not intend to make the reference complained of.

I shall be glad to give to the Committee all supplementary information which may reach me before the end of the Session.

APPENDIX 1.

[*Translation.*]

LETTER FROM THE PRESIDENT OF THE NETHERLANDS HEALTH COUNCIL.

The Hague,

Dr. Kuyperstraat 8,

April 20th, 1923.

DEAR SIR,

In conformity with the wish which you expressed in your letter of March 14th last, I have the honour to transmit to you a draft scheme for the interchange of Health Officers, which could be arranged in Holland. I have drawn up a list of lectures which might prove of interest, and of institutions which could be visited.

Naturally, this list is only a provisional one, that is to say, it could be either amplified or shortened in accordance with the wishes of the Health Committee of the League of Nations and as circumstances required. I have calculated that the lectures would last for three weeks and that in the intervals between the lectures visits might be arranged.

If you would like lectures on any other subjects, I should be glad if you would inform me, and I will do what I can to meet your wishes.

The lectures could be delivered either in French or English, or might, if necessary, be translated into one of these two languages. Contrary to what I said in my last letter, we should also be able to organise a visit to the Health Services of our large towns, the Central Laboratory at Utrecht, the Laboratory of Tropical Hygiene, etc. This would rather depend on the number of foreign doctors coming to visit us.

I should add that I am writing to you after having obtained the authorisation of the Minister in charge of Public Health matters. If my data are insufficient, or if I have not properly understood your wishes, I trust you will inform me of the fact; in any case I am entirely at your disposal.

I have the honour, etc.,

(Signed) Dr. J. JITTA,

President of the Netherlands Health Council.

LIST OF THE LECTURES AND OF INSTITUTIONS TO BE VISITED ON THE OCCASION OF THE
INTERNATIONAL INTERCHANGE OF HEALTH OFFICERS IN HOLLAND.

I. LECTURES.

1. Health organisation in the Netherlands.
2. The organisation of public medical relief.
3. The organisation and methods of the Central Health Laboratory.
4. The campaign against contagious diseases in the Netherlands.
5. The campaign against malaria.
6. Vaccination and serotherapy in the Netherlands.
7. Health organisation in the Dutch Indies.
8. The organisation and methods of the de Weltevreden Laboratory (Island of Java).
9. Vaccination in the Dutch Indies.
10. The organisation of the Health Service in Amsterdam.
11. The organisation of the Health Service in Rotterdam.
12. Medical statistics.
13. The Pharmacotherapeutic Institute.
14. The inspection of foodstuffs.
15. The inspection of meat and meat products.
16. Institute for the people's food supply.
17. Inspection of industrial health conditions.
18. Water supply in the Netherlands.
19. Sewerage works and incinerators.
20. The principles of house construction.
21. The training of nurses.
22. The training of midwives.
23. The organisation of the "Green Cross".

Infant Welfare.

24. The protection of nurselings.
25. The Health Service and school doctors.
26. Open air schools, school colonies, and the sending of sickly children into the country.
27. School Health Services.
28. Institutions for backward, deaf, blind, and deformed children,

Baths.

29. Public baths and school baths.

Tuberculosis.

30. The campaign against tuberculosis.
31. The campaign against *alcoholism*.
32. The campaign against *venereal diseases*.
33. The methods and organisation for the care of the *mentally deficient*.

II. INSTITUTIONS TO BE VISITED.

1. Frontier Protection Service at Oldenzaal.
2. Central Laboratory at Utrecht.
3. Colonial Institute at Amsterdam and Leyden.
4. Laboratory of Comparative Pathology at Leyden.
5. Serological Institute at Rotterdam.
6. Smallpox Vaccination Institute at Amsterdam.
7. Visit to the various hospitals (Children's Hospital in Amsterdam), (Civil Hospitals etc.)
8. Visit to the Offices of the Amsterdam Health Service.
9. Visit to the Amsterdam Disinfection Department.
10. Visit to the Rotterdam Disinfection Department.
11. The deratization of ships at Rotterdam.
12. The deratization of ships at Amsterdam.
13. Visit to Emigrants' Hostels at Rotterdam.
14. Visit to the Central Statistical Office at The Hague.
15. Visit to the City of Amsterdam Water Supply Department.
16. Visit to the Incinerators at Amsterdam, Rotterdam or The Hague.
17. Visit to the Psycho-analytical Institute in Amsterdam.
18. Visit to the Institute for Cancer Research.
19. Visit to the Museum of Industrial Safety Appliances, at Amsterdam.
20. Visit to the Amsterdam slaughter-houses.
21. Visit to a model dairy.
22. Visit to workmen's dwellings and garden cities.
23. Open air school at The Hague.

24. School children's colonies at the seaside.
25. School children's colonies in the country.
26. Schools for backward children at Amsterdam.
27. Schools for blind children at Amsterdam.
28. Schools for deaf children at Amsterdam.
29. Institutes for deformed and rickety children (Rekken).
30. Public baths at The Hague or at Amsterdam.
31. School children's baths at The Hague or at Amsterdam.
32. Anti-tuberculosis Dispensary at Amsterdam and at The Hague.
33. Hooglaren and Hoog-Blaricum Sanatoria.
34. The temporary Sanatorium at Berg en Bosch (Apeldoorn).
35. Dekkerswald Sanatorium at Groosbeek near Nymegen.
36. Consulting Room for sufferers from alcoholism in Amsterdam.
37. School for midwives in Amsterdam, Rotterdam or Haarlem.
38. Mental Hospital at Castricum, or elsewhere.
39. Municipal Orphanage at Amsterdam.

APPENDIX 2.

Geneva, March 17th, 1923.

MEMORANDUM RELATING TO A PRELIMINARY SURVEY OF VITAL AND PUBLIC HEALTH STATISTICS, AND HEALTH ORGANISATION.

I. *A survey of vital and public health statistics would include such subjects as the following :*

A. Descriptive :

(a) Notification of disease.

(1) What diseases are notifiable under control laws and under local laws ? A summary of existing laws may be desirable.

(2) Procedure of notification and provisions for diagnosis. A collection of all forms used in this connection is desired.

(3) What tabulations of cases of the various diseases (weekly, monthly and annual) are made in the Central Statistical Office and in the Ministry of Health ? (By locality, by sex, by age ? What age groupings are used ? etc.). A collection of all tabulations and of forms currently used is desired.

(b) Registration of births and deaths.

(1) Procedure of registration and provision for diagnosis of deaths ; definition of still births ; summary of existing laws.

A collection of all forms is desired.

(2) What tabulations of deaths (weekly, monthly and annual) are made in the Central Statistical Office and in the Ministry of Health ? (By locality, by cause, by sex, by age ?) A collection of all tabulations and of forms currently used is desired.

(c) Population : date of last census.

(d) It is desired that copies of the latest publications of notifications of cases, of deaths, of births, and of population be provided.

B. A study of the shortcomings, errors and various factors and conditions which may affect the accuracy and completeness of these records and the statistics.

C. Efficiency of the organisation and conditions affecting its efficiency.

D. A description of the statistics available for each disease for past years, including a description of the details provided in the statistics, *e. g.*, sex and age distribution, rural and urban classifications, etc.

II. *The report should also contain a statement :*

(1) (a) On the existing public health legislation as well as the decrees enforcing it ;

(b) On the sanitary organisations, both central and local, *i. e.*, State organisations, provincial or district organisations, departmental or communal organisations ; the number of State sanitary and public Health Officers, of provincial and communal Officers ; the method of their recruitment ; the amount of their remuneration, and the method of payment ; auxiliary personnel ; medical organisations ;

- (2) On sanitary equipment, *i.e.*, hospitalisation supported by (a) the State, (b) provinces and communes, and (c) private organisations, hospitals, sanatoria, lunatic asylums, etc.
- (3) A. (a) On the campaign against infectious diseases ;
 (b) On the campaign against tuberculosis ;
 (c) On the campaign against venereal diseases ;
 (d) On the campaign against other infectious and contagious diseases, etc.
- B. (a) On the protection of maternity, babies and children ;
 (b) On school hygiene ;
 (c) On the campaign against alcoholism ;
 (d) On the housing problem ;
- C. (a) On the arrangements for the provision of drinking water, and the draining of dirty water ;
 (b) On publicbathing establishments ;
 (c) On the control of foodstuffs ;
- (4) On the activity of the organisations referred to above.
- (5) On the Medical Officers, the authorities, and the general public vis-à-vis the sanitary and social legislation.

Letter inviting Co-operation in drafting of Sanitary Survey Report.

This letter was sent to the following countries :

Albania	Germany	Poland
Austria	Greece	Portugal
Belgium	Hungary	Roumania
Czechoslovakia	Italy	Russia
Denmark	Latvia	Serb-Croat-Slovene Kingdom
Esthonia	Lithuania	Spain
Finland	Netherlands	Sweden
France	Norway	Switzerland

[Translation.]

Geneva, March 21st, 1923.

SIR,

As you are doubtless aware, the Health Organisation of the League of Nations, in discharging the duties entrusted to it by the Council and the Assembly, has had to collect from the public health administrations of the various Governments and from a number of other private sources a great amount of information on the epidemiological situation ; part of this information has been published by the Health Section.

It will be possible to develop this epidemiological information service and organise it in a more methodical manner thanks to a grant from the Rockefeller Foundation.

I have the honour to ask you if you would be willing to assist in the organisation of this epidemiological service by sending us a report in connection with the various problems which we have endeavoured to set forth as clearly as possible in the memorandum attached to the present letter.

The task undertaken by the Health Organisation of the League of Nations in regard to the epidemiological information has been defined in the following terms :

- (a) Study of the simplest and most reliable methods of obtaining information regarding the incidence of disease and the progress of epidemics.
- (b) Comparative study of public health statistics of different countries.
- (c) Study of the world distribution of particular diseases.
- (d) Comparative study of the incidence of particular diseases in different countries, and their public health statistics, with a view to determining the nature and practical significance of observed difference between them.
- (e) Study of the periodicity of epidemics and the factors which cause or influence such periodicity.
- (f) Organising, with the concurrence of the public health administrations of the countries affected, missions of enquiry regarding the development of epidemics, or for other purposes referred to in the preceding paragraphs.
- (g) The publication and distribution of special reports and periodical bulletins.
- (h) A review of the public health of the principal countries of the world, with a view to the issue, if circumstances permit, of reports on the subject as a whole.
- (i) Organising a rapid interchange of information in regard to particular diseases in cases in which immediate action appears to be necessary.
- (j) The employment at headquarters or elsewhere of experts provided with requisite assistance and technical equipment.

If it is desired to arrive at positive conclusions by comparing data from various countries in which the health services are organised on very different lines, and employ distinctive methods, it is obviously essential that these data should be subjected to critical analysis. The Health Section of the Secretariat will, therefore, have to collect as soon as possible information on

the organisation of demographic and health statistics and the public health services in the various countries. It is for this purpose that we have the honour to ask you for a report.

This report, in our opinion, should consist of from fifty to one hundred typewritten pages and should be drafted preferably in French or English, although, if it would be more convenient for you, there would be no serious objection to it being drafted in the language of the country with which your investigation deals. It should be completed within six weeks. Subsidiary documents should be attached to the reports, and should include such tables and statistical data as you may be able to collect, and such critical observations in respect of them as you may consider advisable. It would in fact be most unscientific to express an opinion on the methods adopted by a health service and the value of the results obtained by that service without attaching to the statement the whole of the relevant statistical documents which constitute at once the basis of the work of the service and the sum total of its achievement.

As the funds at the disposal of the Health Organisation are strictly limited, it will not be possible for us to offer you more than 150 dollars as remuneration for the work in question.

I should be very glad to receive your reply as soon as possible and to send you any additional information which you may require.

I have the honour to be, Sir, etc.

Medical Director.

APPENDIX 3.

STUDY OF SOCIAL HYGIENE AND PUBLIC HEALTH.

The letter given below was sent to leading experts in the following countries :

Austria	Hungary	Russia
Belgium	Italy	Kingdom of the Serbs, Croats
Czechoslovakia	Japan	and Slovenes
Denmark	Norway	South America
Finland	Poland	Spain
France	Portugal	Switzerland
Germany	Roumania	

Geneva, February 13th, 1923.

As you will remember, the Health Committee, at the suggestion of Dr. Chodzko, adopted a Resolution requesting us to collect documents concerning the present state of the study of social medicine and public health in the Universities of Europe, America and Japan.

I had occasion to discuss the subject with Prof. Pearce, Director of the Division of Medical Education of the Rockefeller Foundation, as well as with several of the leading British Sanitary officers and, after having examined the existing documents on the subject, it appears to me that the most profitable method of procedure would be to invite a specially designated person to present a detailed report for each group of countries. This task would consist in making a critical study of the subject rather than an analysis of the documents to be collected by the Health Section of the League. Each individual report would be presented to the Health Committee and, at the same time, the Health Section would prepare a general report on the documents received.

I should be grateful if you could suggest the name of someone fitted to undertake the preparation of such reports.

With kind regards.

Yours sincerely,

Medical Director.

APPENDIX 4.

[Translation.]

I. REPORT ON THE COURSES FOR MEDICAL OFFICERS OF HEALTH, AT WARSAW.

Warsaw, January 8th, 1923.

SIR,

I have pleasure in informing you that the epidemiological course for medical officers of health was held at Warsaw from November 20th to December 10th, 1922. A considerable number attended : 18 officers in the Department of the High Commissariat for the anti-epidemic campaign, 23 district health officers under the Ministry of Public Health, and 19 military health officers of the Army Medical Corps. The programme was drawn up in advance¹, and, as the

¹ This programme is reproduced at the end of the report.

circumstances are known to you, I shall refer only to the alterations which were made at the request of the students. We added a lecture on researches on typhus (M^{mes} Sparrow, of the State Epidemiological Institute, Warsaw): one on infectious jaundice (Dr. Anigstein, of the State Epidemiological Institute, Warsaw); one on tuberculosis in Poland during and after the war (Dr. Gantz, Warsaw); two on the campaign against venereal diseases (Dr. Wernic of the Ministry of Public Health); and two on the etiology and treatment of malaria (Dr. and M^{mes} Hirszfeld, of the State Serum Testing Institute, Warsaw).

The lectures lasted from 9 a.m. to 2 p.m. The afternoons were devoted to a practical bacteriological course in the methods of research required in epidemiological practice. The lectures and courses were given in the State Epidemiological Institute, the lecture-rooms of which were kindly placed at our disposal. During the course the students visited the chief sanitary institutions in Warsaw, such as the Municipal Health Service, the Disinfecting Station, the Waterworks and filtration plant, and the Charles-Marie Children's Hospital.

After the course the students made a four days' excursion, during which they visited the medical stations in the frontier sanitary zone, the quarantine station for returning emigrants at Baranowicze, the station and hospitals at Bialystok. M. Kamler, sanitary engineer of the High Commissariat for the anti-epidemic campaign, accompanied the party, which was warmly welcomed throughout its journey by the officers of the anti-epidemic Service, and particularly by Dr. Lipko at Baranowicze, and Dr. Lewit at Bialystok.

All the students offered us hearty thanks for carrying out the course in such favourable conditions; and for our own part we can vouch for it that they did useful and conscientious work.

It might perhaps be desirable in future to lay greater stress on practical work, the chemical and bacteriological analysis of water, and methods of hygienic inspection.

The most serious difficulty in the way of organising the course, namely, the question of housing the pupils, was overcome, thanks to the kindness of the military authorities, more especially Surgeon-General Zwierzchowski, Head of the Medical Department in the War Ministry who made various wards in the Military Hospital available for the course.

In conclusion, I venture to submit a statement of the expenditure incurred in connection with the course. I can place at your disposal the original receipts:

Lectures and courses	£83.16. 0½
Excursions	17. 2.10
Cost of boarding students	94. 7. 5
Adaptation of premises	25. 3. 0
Office expenses, postage	6.10. 4
Experts' fees	6.12. 5
	<hr/>
	£233.12. 0½

The balance, £67, has been deposited in the Warsaw Commercial Bank. Having discussed the question with Dr. Chodzko, Professor Hirszfeld, Director of the State Serum Institute, and Dr. Sierakowski, Assistant Director of the State Epidemiological Institute, I venture to suggest that the sum referred to should be employed for the next courses in hygiene in the following proportions:

Tables and graphs	30%
Material for the bacteriological course:	
Preparations and cultures	20%
Lantern slides	40%
Library	10%

Hoping that the above suggestions will receive favourable consideration,

I am,

Yours faithfully,

(Signed) SZYMANOWSKI.

Professor Rocco Santoliquido,
League of Red Cross Societies,
Paris.

Programme of the Warsaw Post-graduate Medical Course.

I. — Epidemic Diseases in Poland and adjacent countries 7 hours.
Professors: Cantacuzène (Roumania), Szymanowski (Poland), Tarassevitch (Russia).

II. — Epidemiological investigations:

(a) Investigations on the spot
(b) Methods of collecting health statistics
(c) Principles of health legislation
(d) Public health procedure 12 hours.

Professors: Dr. Wroczyński, Director of the Polish Public School of Hygiene; Dr. Lewit, Epidemic

Commissioner for the Grodno-Vilna area ; Dr. Pal-
ester, Epidemic Commissioner for Eastern Galicia ;
Professor Abel of Jena.

- III. — Methods of combating epidemics in the European sanitary zone.
- (a) "Sanitary zone" : Quarantine in theory and in practice.
"Frontier traffic control". "Procedure to be adopted
in the interior of a country". "Hospitals in the sanitary
zone". "Frontier stations" 4 hours.
 - (b) Anti-epidemic activity in the centres of epidemics. Hos-
pitals and mobile columns 4 hours.
 - (c) Bathing and delousing establishments : types, construc-
tion, administration 2 hours.
 - (d) Prophylactic inoculations 3 hours.
- Professors : Dr. Wroczynski, Director of the Polish
School of Hygiene ; Dr. Lewit, Epidemic Commis-
sioner for the Grodno-Vilna area ; Dr. Palester, Epi-
demic Commissioner for Eastern Galicia ; Dr. Kamler,
Head of the Technical Department of the Polish Epi-
demic Commissariat (c) ; Dr. Sierakowski, Vice-
Director of the State Epidemiological Institute,
Warsaw (d).
- IV. — Relations with civil (central and provincial) and military authorities
in anti-epidemic work 3 hours.
- Professors : Dr. Janiszewski, formerly Minister of Health,
Chief medical officer of health of Cracow.
- V. — International conventions and agreements 2 hours.
- Professor : Dr. Trenkner, of the Ministry of Health of
Poland.
- VI. — Etiology, symptomatology, diagnosis and treatment of infectious
diseases based on the most recent researches. 10 hours.
- Typhus fever : Dr. Karwacki, Sterling-Okuniewski.
 - Relapsing fever : Dr. Karwacki, " "
 - Typhoid and para-
typhoid fevers : Dr. Karwacki, " "
 - Cholera : Dr. Groer (Vienna University and Lwow).
 - Dysentery : Dr. Groer " " "
 - Smallpox : Dr. Groer " " "
- VII. — Bacteriology and disinfection ; methods of obtaining and dis-
patching material 12 hours.
- Instructors : Dr. Bruner, Head of the Bacteriological
Service, Epidemiological Institute, Warsaw.
- VIII. — Water supply and drains 10 hours.
- Professors : Dr. Kirkor, Head of the Hydrological Labo-
ratory, Ministry of Health, Poland.
- IX. — Health propaganda 2 hours.
- The Doctor in charge of the mobile column of the League
of Red Cross Societies.
-
- 70 hours.
- Discussion of Students' theses 30 hours.

PAN-RUSSIAN SOVIET REPUBLIC.

Narkomzdrav.

No. 1805.

Moscow, March 13th, 1923.

Attached is a concise account of the training and post-graduate course for medical offi-
cers of health. The Public Health Department desires to express its gratitude to the League
of Nations Epidemic Commission for its assistance in carrying out the courses.

In view of the fact that the organisation of future courses on this subject is a matter of exceedingly great importance, the Public Health Commissariat ventures to hope that it can rely on a continuation of the much appreciated assistance of the League of Nations Epidemic Commission in the organisation of such courses as in the past.

Signed by :

The Commissary of Public Health :
SIEMASHKO.

*The Head of Epidemiological Sanitary
Department :* (Signature illegible).

The Director of the Post-graduate courses :
KANTAROVITCH.

The Secretary : (Signature illegible).

To
The Representative of the Epidemic Commission,
League of Nations,
Moscow.

*Concise Account of the Training and Post-graduate Course of the Epidemiological Section
of the Narkomzdrav of Medical Officers of Health.*

(People's Commissariat for Public Health.)

The training and post-graduate course for medical officers of health was started on November 15th, 1922. The duration of the course having been limited to four months, the studies were concluded on March 15th, 1923.

In selecting doctors for this course, the Public Health Commissariat gave preference to medical offices from the more remote provinces. Such vacancies as were not filled by December 1st were filled by doctors from the Central Provinces and Moscow.

The total number of doctors who attended the whole course was 49 : six others attended some of the lectures.

The programme was divided into three parts and a number of excursions were made. The lectures were as follows :

PART I.

(a) *Bacteriology.*

Lecturer.	Subject of lecture.	No. of Hours.
Prof. Tarassevitch.	Bacteriology ; general and special	
Prof. Martzinovsky	» » » »	
Prof. Barykine	Practical bacteriological work	
Prof. Lobarsky	» » »	460

(b) *Epidemiology.*

Dr. Syssine	Epidemics in Russia and the organisation of the epidemic campaign	16
Prof. Diatropoff	General epidemiology	16
Dr. Peruansky	Disinfection	8
Prof. Martzinovsky	Protozoal disease : clinical studies	20

PART II.

Prof. Ivanitzky	Town planning	35
Prof. Diatropoff	Water supplies and sewage disposal	60
Dr. Gelmann	Housing. Water examination	30
Dr. Voskressensky	Foods and food supplies	80
Dr. Jakovenko	Health statistics	6
Ing. Daniloff	Sanitary engineering	20
Dr. Kastorsky	Special features of organisation of the R. S. F. S. R. Health Service	4

PART III.

Prof. Siemashko	Social hygiene	4
Dr. Koiransky	Industrial hygiene	40
Dr. Katz	School hygiene	20
Dr. Friberg	Health legislation	6
Dr. Strashoune	Public health propaganda	12
Dr. Rafess	Health organisation on railways and waterways	8
Dr. Bronner	Social diseases and the campaign against them	8

In addition to the above, a lecture was given by Dr. Abel of the Jena University, which was followed with keen interest. Unfortunately Colonel Liston and Professor Stolzmann were unable to deliver the lectures that had been arranged.

In addition to the above theoretical and practical course, visits were paid to the following institutions and establishments : —

Bacteriological Institute of the N. K. Z.
Social Hygiene Museum.
Childrens' Model Dispensary.
Bio-chemistry Institute.
Tuberculosis Institute.
Lublin Irrigation Works.
The Metchnikoff Institute.
Roubleff Water Supply.
The Serum control Institute.
The Institute of Dietetics.
The Experimental Biology Institute.
The Institute of Physical Culture.
Urban Slaughter Houses and cold storage.
Moscow Communal Museum.
Moscow Tuberculosis Dispensary.
Kremlin isolation station.
Central Institute for the Study of Labour.
Disinfection Station (Moscow).

The Epidemiological and Sanitary Department of the Narkomzdrav is of the opinion that the course was very successful, and that the medical officers derived great advantage from them by supplementing their knowledge and enlarging their scientific horizon.

The Epidemiological Sanitary Department places the greatest importance on the organisation of other similar course, so that still more doctors may supplement their knowledge. In this manner, the Republic will possess a large number of doctors trained in bacteriology and epidemiology.

The programme of the courses will be improved considerably in future ; less attention will be paid to bacteriology, and the time thus saved will be devoted to public health and visits to scientific institutes, etc.

The lectures and practical courses were followed with unfailing interest. On their completion, the participants returned to their respective posts.

March 13th, 1923.

*Signed by the Chief
of the Epidemiological Sanitary Department.*

The League of Nations
Epidemic Commission.

*By the Director of the Post-graduate
Course and by the Secretary.*

Report on the Post-graduate Course for Medical Officers of Health at Kharkov.

UKRAINIAN SOVIET REPUBLIC.

Public Health Commissariat.

Epidemiological and Sanitary Department.

March 21st, 1923.

The following remarks refer to the post-graduate course for medical officers of health now being held in Kharkov.

The epidemiological series has been concluded. The bacteriological lectures and the lectures on immunity occupied nineteen hours.

For the practical work in bacteriology the members of the class were divided into two groups, each of which worked four hours a day for six weeks. Twelve of the most advanced in bacteriology, were subsequently selected and attached for a month to the Kharkov Bacteriological Institute for further instruction.

These medical officers will later be placed in charge of provincial public health laboratories. Lectures on epidemiology were delivered. Demonstrations were given of anti-epidemic measures enforced in the various centres of infectious diseases in the city of Kharkov.

Practical instruction was given on the subject of disinfection and the various forms of disinfecting apparatus.

Various establishments concerned in the anti-epidemic campaign (infectious diseases, hospitals, baths, night shelters, isolation stations and vaccines institutes), were inspected.

Practical work in connection with the examination of water, air and foods was carried out in the laboratories of the University of Kharkov.

A number of industrial establishments were visited.

Lectures were given on social diseases (tuberculosis, venereal disease and malaria). The members of the class also visited a dispensary, the Tuberculosis Institute and a dermato-syphilitic polyclinic. Instruction was given in health statistics, and the various methods of collecting data were discussed. The course of lectures on sanitary engineering (water and drainage supplies, town planning, etc.), are not yet quite finished. During the next few days the class will inspect the Kharkov water supply and the sewage disposal works, the slaughterhouse, markets, etc.

Dr. Pyjof gave a lecture on public health activity in western Europe (Belgium and Italy). In addition to lectures, practical work and visits of inspection, dissertations and discussions took place, and reports were read by the students themselves.

A series of lectures will shortly begin on the following subjects :

- (a) Health legislation in western Europe and in Russia ;
- (b) Sanitation of railways and waterways ;
- (c) Health propaganda.

During the period of the course each student was required to write essays on two given subjects. The first theses have already been submitted and considered ; the second series is now being written.

The course will be concluded in April, when the participating medical officers will be appointed to posts in various parts of the Ukraine.

It is considered that further courses should be arranged at an early date as the supply of qualified health officers in the Ukraine falls far short of the demand. At present, the anti-epidemic campaign in some areas is in the charge of insufficiently qualified officials.

The first post-graduate course has been a great success. In future, it is hoped that experts from foreign countries will co-operate to a greater extent than has been possible on the present occasion.

The Ukrainian People's Commissariat for Public Health is also of opinion that it is urgently necessary to organise, during the summer of this year, a second course which might begin in June.

I trust you will submit this question to the Health Section of the League of Nations, and will support our application for the necessary funds for these further courses to be placed at our disposal.

The course lasted longer than had been intended, as, owing to the shortage of laboratory accommodation in the city, the class had to be divided into groups for practical bacteriological work.

It is intended that future classes will be smaller and that laboratory accommodation will be increased, thus shortening the duration of the course.

I have the honour to be, Sir, etc.

(Signed) Dr. MARZEFF.

To Doctor Pantaleoni,

Representative of the Epidemic Commission of the League of Nations,
Moscow.

Programme of the Kharkov Post-graduate Course for Medical Officers of Health.

I. EPIDEMIOLOGY.

- (1) Epidemiology.
- (2) Cholera.
- (3) Intestinal infections (typhoid, paratyphoid A. and B., dysentery).
- (4) Typhus and relapsing fevers.
- (5) Plague.
- (6) Diphtheria.
- (7) Smallpox, chicken-pox, and vaccination.
- (8) Scarlet fever and measles.
- (9) Influenza.
- (10) Cerebro-spinal meningitis.
- (11) Hydrophobia.
- (12) Intestinal diseases.
- (13) Syphilis.
- (14) Tuberculosis.
- (15) Malaria.

II. BACTERIOLOGY.

Prof. Korshun :	History of Bacteriology. Streptococci. Immunity. Diphtheria and anti-diphtheritic serum	17 hours.
Prof. Dedulin :	Ptomaine poisoning. Bacteria. Filterable virus. Glanders	8 hours.
Prof. Grihev :	Lipoids and their significance in immunity. Theory of physical and chemical immunity	4 hours.
Prof. Palladine :	Ferments	2 hours.
Prof. Sitnikov :	Acid-fast bacteria	2 hours.
Dr. Grigorovitch :	Typhoid and paratyphoid bacilli. Dysentery bacilli and plague bacillus	8 hours.
Dr. Kacevalov :	The staphylococcus pyocyaneus proteus vulgaris. Anaerobes, Malignant oedema, gas gangrene, tetanus, antitetanic serum. Hydrophobia	2 hours.
Dr. Kandiba :	Vaccination	8 hours.
	Spores. Gonococcus ; meningococcus. Syphilis	2 hours.
Dr. Efimov :	Bacteriological technique. The Wassermann reaction	7 hours.
		14 hours.

Dr. Cehnovicer :	Acid-fast bacilli : Leprosy and tubercle bacilli. Tuberculin.	
Dr. Allilin :	Plague in Siberia	2 hours.
Dr. Derghach :	Vibrios : Cholera	2 hours.
Dr. Vasiliev :	The Abderhalden reaction	2 hours.
Dr. Gusman :	Typhus and relapsing fever. Weil-Felix reaction.	
Dr. Markov :	Tropical diseases. Malaria. Insects as disease carriers	6 hours.

APPENDIX 5.

CONFERENCE OF THE RED CROSS SOCIETIES OF EASTERN EUROPE.
WARSAW, APRIL 9th-14th, 1923.

Resolution adopted by the Second Commission.

Organisation of the Campaign against Epidemics.

In the campaign against epidemics in Eastern European countries, it is for the State to take the leading part and direct the campaign.

The Red Cross Societies must unite their efforts to those of the State, but any action which they take must be subject to the approval of the Department directing the anti-epidemic campaign. Thanks to the numerous and powerful connections it possesses in every country, the Red Cross is able to assume great responsibility and accomplish important work for the prevention of the outbreak of epidemics by organising propaganda in favour of public and personal hygiene.

APPENDIX 6.

PASTEUR INSTITUTE,
25, Rue Dutot.

Paris, February 6th, 1923.

[Translation.]

SIR,

I read on pages 34 and 35 of the Minutes of the fifth Session of the Health Committee of the League of Nations, on the subject of anti-dysentery vaccination in Russia, that Dr. Siemasko on several occasions spoke of experiments which have been made with anti-dysentery vaccine from the Pasteur Institute. On page 35, line 24, he states " that a liquid vaccine for vaccination *per os* was being prepared at Moscow, but that he would prefer the use of the vaccine of the Pasteur Institute. The latter vaccine, however, was expensive, and he would ask whether it would be possible for assistance to be given in procuring an adequate supply. "

I feel it my duty to inform you that the Pasteur Institute has never sent any anti-dysentery vaccine for buccal vaccination in Russia, that it has never quoted any prices for the sale of such vaccines, and that, if any have been sold to medical or bacteriological authorities in Russia or any other country, the vaccines in question could not have been *prepared at the Pasteur Institute*.

We consider that buccal vaccination is perhaps possible, and that, to form a correct opinion of its results, it should be tried under the best conditions ; but we are not yet able to have any scientifically established opinion on this subject ; consequently we do not feel in a position to issue to the public — and still less to sell to it — any vaccines the efficacy of which has not been sufficiently demonstrated.

I should be much obliged if you would be good enough to bring the foregoing to the knowledge of Dr. Siemasko and the members of the Health Committee of the League of Nations.

(Signed) Dr. ROUX.

To Dr. Madsen,
Chairman of the Health Committee
of the League of Nations.

Copenhagen, February 12th, 1923.

SIR,

I have just received your letter of February 6th, concerning the anti-dysentery vaccine or buccal vaccination. In accordance with your desire, I shall at once bring its contents to the notice of Dr. Siemasko and the Members of the Health Committee of the League of Nations.

(Signed) TH. MADSEN.

To Dr. Roux,
Director of the Pasteur Institute,
Paris.

Annex 3.

C. H. 83.

MEMORANDUM BY THE MEDICAL DIRECTOR REGARDING THE APPOINTMENT OF A SPECIAL MIXED SUB-COMMITTEE TO CONSIDER THE SCHEME FOR THE CONSTITUTION OF THE PERMANENT HEALTH ORGANISATION.

1. I had the honour to circulate on February 7th, 1923, to the Members of the Committee the report presented by M. Viviani on the work of the Health Committee and the resolutions adopted by the Council on January 30th, 1923, (C. 115. M. 54. 1923. III).

2. I beg to draw attention to the terms of Resolution No. III :

“ It was agreed that the Committee was prepared, on the invitation of the Council, to undertake the preparation of the constitution of the Permanent Health Organisation.

“ In order to give effect to this resolution, the Council might instruct the Secretary-General of the League to negotiate with the Committee of the Office international d'hygiène publique with a view to forming a special mixed committee composed of an equal number of members of the Health Committee of the League and of the Office international. The President of this mixed committee would be the acting President of the Office international d'hygiène publique, and the duty of the Committee would be to prepare, for the next Assembly of the League, a scheme for the constitution of the Permanent Health Organisation; this scheme would be submitted to the Council in due course before the Assembly. Such a method of procedure would, in my opinion, be the best to adopt in order to avoid, — in accordance with the resolution of the Third Assembly, the overlapping which has hitherto resulted from the existence of several international public health organisations.”

3. In execution of this resolution the Secretary-General has requested your Chairman to negotiate with the President of the Office international with a view to the appointment of the Mixed Sub-Committee. An agreement has been reached between your Chairman and the President of the Office international as to the names of the members who will be requested to serve on this Sub-Committee, the first meeting of which will be convened by M. Velghe in Paris on Monday, May 28th.

4. It may be found convenient to adopt the following procedure. The Mixed Sub-Committee would present its report both to the Health Committee and to the Office international. The Health Committee would then forward the report, with any comments which it may desire to add, to the Council of the League of Nations. The Council would finally consider the scheme and lay it before the Assembly.

5. I have ventured to prepare for the convenience of the members the annexed note concerning the principles underlying the constitution of the technical organisations of the League.

6. I have also annexed the following documents which the members of the Committee may find useful.

- (1) Health Organisation, Resolutions adopted by the First Assembly.
- (2) Recommendations relating to the Health Organisations of the League as amended by the Council at its meeting on September 2nd, 1921, and as accepted by the Second Assembly.
- (3) The Resolution of the Second Assembly concerning the Health Organisation. This is a covering Resolution which explains with what reservations the recommendations of the Council referred to under No. 2 have been accepted.
- (4) Resolutions of the Third Assembly concerning the Health Organisation and the Epidemic Commission.
- (5) Report by the Chairman approved by the Health Committee on August 19th, 1922, on the relations of the Health Committee with the Council and the Medical Director.
- (6) Resolutions of the First Assembly concerning the relations between the technical organisations, the Council and the Assembly of the League (page 12 of the Resolutions).

NOTE ON THE TECHNICAL ORGANISATIONS OF THE LEAGUE OF NATIONS.

I. *Duties of the Technical Organisations.*

The Technical Organisations were set up to assist the Council and the Assembly in all cases in which decisions to be taken by them necessitate enquiries and investigations demanding technical knowledge. In particular, the technical organisations are called on to help the Council, the Assembly, and the States Members of the League of Nations, in carrying out the obligations which they have assumed under Article 23 of the Covenant relating to the supervision of agreements concerning the traffic in women and children, the traffic in opium and other dangerous

drugs, measures for the safeguarding and maintenance of free communications and transit, the equitable treatment of commerce and any international measures for preventing and combating diseases.

The following technical organisations have so far been constituted :

Provisional Economic and Financial Committee ;
Provisional Health Committee ;
Communications and Transit Organisation ;
Advisory Committee on the Traffic in Women and Children ;
Advisory Committee on Traffic in Opium.

II. *Principles underlying the Constitution of the Technical Organisations.*

The main principle has been to group together in the technical organisations experts acquainted with the opinions held in the various countries on the different groups of questions which fall within the scope of each organisation.

The constitution of the organisations is still far from being uniform, partly because their field of work differs in extent and complexity and partly because, owing to circumstances, it has hitherto been impossible for certain organisations to attain their full development.

However, if we take as typical the Communications and Transit Organisation, which is the most highly developed and which was constituted after the Barcelona Conference of 1921, in conformity with the Resolutions of the First Assembly, it may be assumed that the model technical organisation would be composed substantially as follows :

(a) A Conference at which all States Members of the League of Nations and, if necessary, certain States non-members are represented. The Conference may adopt either resolutions, which will subsequently be submitted to the Council or the Assembly, or recommendations, or again international conventions.

The meetings of this Conference are held at not too frequent intervals and are convened by the Council of the League of Nations.

Subject to the decisions of their Governments, the delegates to the conference attend as plenipotentiaries ; otherwise, the decisions of the Conference must be referred by the delegates to their Governments.

(b) The Advisory Committee — This includes representatives of countries who have a permanent seat on the Council of the League of Nations and representatives of a certain number of countries selected by the General Conference. Its duties are twofold. In the first place, it does the preliminary work for the General Conference and carries out the necessary technical investigations ; in the second place, it forwards to the League of Nations technical opinions on any questions falling within its sphere with which the Council may have to deal.

The Advisory Committee may appoint experts to assist it, who take part in its work in an advisory capacity but have no right of voting. Lastly, the Council of the League of Nations may supplement the Advisory Committee by appointing certain persons selected exclusively for their technical knowledge, who attend the Committee's discussions as assessors.

(c) The Secretariat of the Advisory Committee of the Conference consists of a section of the Secretariat of the League of Nations, subordinate to the Secretary-General, who is responsible for ensuring liaison between the organisations and the Council.

The Economic and Financial Organisation and the Health Organisation will, in conformity with decisions taken by the First and Second Assemblies, be modelled on this general scheme. The main difference between these provisional organisations, in their present shape, and the Transit Organisation, is that they were set up by the Council without previous reference to a general technical conference, and that the Economic and Financial Committee and Health Committee are composed of persons who were appointed by the Council and who are not representatives of their Governments.

In addition to the General Conferences, the Council may convene conferences for dealing with certain special technical problems, such as the Conference on Customs Formalities which is to meet at Geneva on October 15th, 1923. In the same way, the Council may lend any technical section of the Secretariat to assist an international conference convened by a Government (Warsaw Health Conference of 1922). In the latter case the Advisory Committee is, from a technical point of view, responsible for the Secretariat's participation in the conference.

III. *Relations between the Council and the Technical Organisations.*

Practical experience gained during the actual work of the League of Nations shows that it would be impossible for the Council to dispense with an advisory organisation which can be speedily convened and to which it can refer when it has to intervene in international questions or international problems bearing upon technical questions. As regards health, for instance, it was necessary for the Council to consult the Health Committee, on the technical programme of the work of the Epidemics Commission set up by the Council, to combat epidemics in Eastern Europe. The Commission was maintained by voluntary contributions from certain members of the League of Nations. Further, the debates of the Committee of the Assembly and of the Assembly itself, have clearly shown how anxious the members of the League of Nations are to simplify and make uniform the machinery of international co-operation in technical matters. They wish to avoid duplication of work, due to the fact that side by side with the advisory organisations created by the Council, there may exist international technical

organisations, which, though in no way connected with the League of Nations, pursue similar aims. It is their desire that the work done by the League of Nations organisations should be made more effective by means of a more exact definition of the various duties allotted to existing organisations, and the system of relations which should exist between them.

Annex 4.

C. H. 103.

APPOINTMENT OF MALARIA EXPERT TO ASSIST THE ALBANIAN GOVERNMENT.

Letter dated May 5th, 1923, from the Albanian Government to the Secretary-General of the League of Nations.

Sir,

My Government has gathered from the provisional Agenda of the sixth Session of the Health Committee which is to take place in Paris on May 26th, that this Committee will discuss the work to be undertaken by the Epidemiological Intelligence and Health Statistics Organisations.

Further the Committee will also have laid before it a Report dealing with the activities of the Temporary Epidemic Commission.

My Government has also gathered from the Minutes of the fifth Meeting of the Committee that the Health Committee takes considerable interest in the problem of malaria in Europe.

In fact, my Government has been asked to nominate one of its Public Health Medical Officers to take part in the Malaria Interchange which will shortly take place in Italy.

It would seem extremely probable that the Health Committee, at its next meeting, will have to deal yet more fully with the malaria problem. You are doubtless aware of the importance of this problem as far as my country is concerned, both from a health and economic point of view. I am therefore instructed to ask you, Sir, whether it would be possible to refer to the Health Committee the study of this question in Albania.

The Committee might perhaps prepare a plan based on certain enquiries which would doubtless fit in with the general programme of the activities of its Epidemiological Intelligence Service, for work to be undertaken in my country in order to enable a permanent campaign against this terrible scourge to be carried on there.

The assistance which has already been given us by the Health Organisation will enable us to have at our disposal technical experts prepared to undertake the direction of a campaign against malaria, but my Government would be most desirous of obtaining the assistance of the Health Organisation in order to draw up the actual programme for this campaign.

I have the honour to be, etc.

(Signed) N. BLINISHTI,

*The Consul General of Albania in Switzerland.
Director of the Permanent Secretariat of Albania
attached to the League of Nations.*

To The Right Honourable Sir Eric Drummond,
League of Nations,
Geneva.

Geneva, May 25th, 1923.

Sir,

I have the honour to acknowledge receipt of your letter No. D. 79 dated May 5th, 1923, which I shall not fail to submit to the Health Committee when it next meets.

The Health Committee will consider whether it is in a position to take up the question raised in your letter, and if so, will decide in what manner it may deal with it.

(Signed) ERIC DRUMMOND,
Secretary-General.

Annex 5.

CORRESPONDENCE RELATING TO THE EXTENSION OF THE SERVICES OF EPIDEMIOLOGICAL INTELLIGENCE AND PUBLIC HEALTH STATISTICS.

Letter dated May 10th, 1923, from Dr. Rajchman to Dr. Russell of the International Health Board, New York.

Dear Doctor Russell,

I enclose herewith a memorandum recording the conversations which we have had concerning the extension of the Service of Epidemiological Intelligence and Public Health Statistics.

I shall present this proposal to the Health Committee of the League of Nations for approval at their next Session on May 26th, and shall notify you immediately as to the official action which has been taken.

(Signed) LUDWIK RAJCHMAN,
Medical Director.

Letter dated May 10th, 1923, from Dr. Russell to Dr. Rajchman.

Dear Doctor Rajchman,

I enclose herewith a memorandum (Appendix 1) recording the conversations which we have had concerning the extension of the Service of Epidemiological Intelligence and Public Health Statistics.

I shall present this proposal to the International Health Board for approval at their next meeting on May 22nd, and shall notify you immediately as to the official action which has been taken.

Yours very sincerely,
(Signed) RUSSELL.

APPENDIX.

League of Nations' Health Programme.

The following memorandum summarizes conversations between Doctor F. Russell, General Director of the International Health Board, and Doctor Ludwik Rajchman, Medical Director of the Health Section of the League of Nations, concerning a proposal involving further co-operation between the International Health Board and the Health Section of the League of Nations in the development of the Service of Epidemiological Intelligence and Public Health Statistics of the League.

(1) The International Health Board at its meetings in May and October, 1922, and at subsequent meetings of the Executive Committee, has approved a plan of co-operation with the Health Section of the League of Nations providing for :

(a) Aid toward the development of an Epidemiological Intelligence Service to be conducted on an international scale ;

(b) Aid in the development of a scheme of international exchange of sanitary personnel.

(2) The International Health Board has made appropriations and commitments of sums not to exceed \$32,840 per year for a period of five years, toward the establishment of an Epidemiological Intelligence Service, and of sums not to exceed \$60,000 per year for a period of three years toward the maintenance of the plan for the international exchange of public health personnel.

(3) Under (1b) the League has successfully conducted two courses for public health officers, the time during the first course having been spent mainly in Belgium and Italy and during the second course mainly in Great Britain. Twenty-three public health officers representing 8 countries participated in the first interchange, and 29 officers representing 18 countries in the second interchange.

(4) Under (1a) a Service of Epidemiological Intelligence and Public Health Statistics established in the offices of the League in Geneva has been further developed. The services of Mr. Edgar Sydenstricker of the United States Public Health Service have been obtained to organise and direct the Service for a period of at least two years.

(5) As the work has developed, it appears to be desirable to make some further provision for the co-ordination of the vital and public health statistics in the various countries with the central office in Geneva, by enabling key men in national departments of public health or statistical offices to work for limited periods in the office of the Service in Geneva, or in some other place which might be selected.

(6) The object would be to train men who are already officials in the various governments, in improved methods of vital and public health statistics, so that these men on returning to their home governments might render more effective co-operation with the international service. The necessity for this additional provision for training has become evident since Mr. Sydenstricker's appointment. The desirability of introducing in the various countries uniform methods, so far as possible, is obvious.

(7) It is estimated that this service would cost for the compensation of the officials during training, their travelling expenses, and possibly in some cases tuition, a total of \$21,000 per year. The plan would be to provide graded compensation on the basis of the experience and present position of each individual, according to the scale of salaries in effect in the department at Geneva, the average amount being approximately \$3,000 per year.

(8) It is therefore proposed that the International Health Board be asked to make available a fund of \$10,500 to cover the cost of putting this plan into operation during the last six months of 1923, and a fund of \$21,000 for a similar purpose during 1924.

Annex 6.

C. H. 86.

REPORT BY DR. CAROZZI ON THE WORK OF THE HEALTH SERVICE OF THE
INTERNATIONAL LABOUR OFFICE.

The special function of the Health Service of the International Labour Office, which was set up, at the suggestion of the Commission on Unhealthy Trades, to give effect to the recommendations of the First International Labour Conference (Washington, 1919), is to deal with questions relating to unhealthy processes, occupational diseases and, generally speaking, the hygiene of labour. This service, which has been actively carrying on its duties since the end of September 1920, at present forms part of the Research Division. It consists of a chief of section, a medical specialist in industrial health and medical questions, two members of section, a clerical assistant and a shorthand-typist and secretary.

At its meeting on April 12th, 1921, the Governing Body further decided to create an "Advisory Committee on Industrial Hygiene" the appointment of which had been fore-shadowed when the Health Service itself was set up, and which was intended to assist and guide the latter in the performance of its duties. The first idea of the Governing Body was to establish a Committee consisting of specialists (medical men, factory inspectors, experts attached to workmen's and employers' organisations or to industrial undertakings), but on again considering the question it formed the opinion that a Committee of this nature would not give full effect to the recommendations of the Washington Conference and that it was necessary to consider the advisability of calling in representatives of the employers and workers to assist the experts.

The Committee, however, in the provisional form in which it had been constituted, met unofficially on October 22nd and 23rd, 1921. When consulted as to the form which the Committee should ultimately take, the members were unanimously of opinion that it should be a purely scientific body. Influenced by the recommendations expressed by the experts, the Governing Body returned to its original design and decided that the Advisory Committee should be purely technical in character. It was also decided that, for reasons of economy, the experts and the Labour Office, in carrying on their work of mutual assistance should, as a general rule, communicate with each other in writing, but that occasional meetings of experts possessing special qualifications for dealing with questions coming up for consideration should be held, preferably when Conferences were in session or, where such an arrangement was not possible, when convened by the Governing Body.

The International Labour Office accordingly applied to experts of established reputation. It requested the Governments of countries possessing highly organised systems of industrial medical inspection to appoint one of their inspectors to join the Committee, and it invited the assistance of industrial health specialists attached to scientific institutions or to employers' or workmen's organisations. Moreover, it was decided that the Health Section and the Health Committee of the League of Nations should be asked to appoint representatives on the Committee.

The work of the Health Service of the International Labour Office may be classified under two main headings: 1) Investigation of questions relating to Conferences: preparatory work in connection with questions on the agenda; drafting of questionnaires and reports; investigation of questions forwarded to the Health Service; examination from a scientific point of view of recommendations and draft conventions: (2) Collecting information in regard to problems of industrial hygiene and pathology.

The Washington Commission on Unhealthy Trades while "regretting that [it had not been able to cover all subjects coming under this classification]" transmitted a number of general and special questions to the Labour Office for its consideration. The special questions included the use of white lead in the painting of buildings, the disinfection of wool infected by anthrax spores, the use of nitrate of mercury, in the process of "carrotting" rabbit fur (i. e. brushing the fur with a solution of the salt in question) and intoxication by carbonic oxide; the general questions included that of unhealthy trades, and also that of the compulsory notification of, and compensation for, occupational diseases.

During the first year (1921) of its activities the Health Service devoted its entire energies to the investigation of the two great problems of *anthrax* and *white lead*, which were to be discussed at the First International Labour Conference (Geneva, October 1921). On the *lead* question it prepared a series of documents based on technical data or statistics which it had received in reply to the questionnaire (Red pamphlet, question 3 B, Prohibition of the use of white lead in painting) sent out to States, Members of the International Labour Organisation, and to the principal trade organisations concerned, and also based on official reports and reports of investigations which had appeared in leading medical and technical publications. Although this report had been completed when the Conference met, it has not so far been possible to publish it, but it will be issued as soon as it has been submitted for approval to certain members of the Advisory Health Committee appointed by the Governing Body.

The documents in question include a historical sketch of the social, international, workers' and employers' movement in connection with the question; the views of specialists; the nature of the poison; medical statistical and technical data and the question of State regulation. The annexes give the results and findings of inquiries conducted in various countries, laws regarding the painting trade and the report of the 1921 Conference.

In the meantime, however, the International Labour Office has published a series of pamphlets on the question in its "Studies and Reports".

As a result of numerous discussions which took place in the special "White Lead" Committee appointed by the Conference and also in plenary meetings, a draft convention was adopted, practically unanimously, prohibiting the use — except in certain special cases — of white lead, sulphate of lead and any products containing these pigments, in the internal painting of buildings, and regulating the employment of these products in connection with work in which their use is not prohibited.

As in the case of white lead the Health Service had to draw up a technical questionnaire — which was circulated in the usual manner — on *anthrax*. This questionnaire, which was supported by figures and statistics, set forth the danger of anthrax infection in various wool industries. It also included a discussion on prophylactic measures and recognised processes of disinfection and concluded with a special questionnaire on the desirability of the compulsory disinfection of wool and of the creation of an international commission which should be responsible for the organisation and control of this disinfection. Moreover, the questionnaire asked for certain legislative and statistical particulars. The replies received by the International Labour Office supplied material for a report. In addition to this, the Health Service collected much technical information on this question, drawn from official reports and the best known specialist publications. Both documents were submitted to the Conference and served as the basis for discussion.

While this work was being accomplished, the Health Service had published in its "Studies and Reports" a translation of an English memorandum issued by the Home Office regarding the disinfection of wool in Great Britain.

The problem was carefully considered during the Conference by a committee known as the "Anthrax Committee". After numerous discussions, the latter concluded that the question had not been considered fully enough from the economic and humanitarian point of view to justify the adoption of a convention. The Committee therefore resolved to set up an Advisory Anthrax Committee for the purpose of examining the question in all its aspects and submitting a report to the Governing Body in time to be considered by the 1923 Conference.

During its eleventh session, in January 1922, the Governing Body decided to set up this committee, and mapped out its programme of work in accordance with the resolution adopted by the 1921 Conference. The Committee, composed of distinguished specialists belonging to the twelve countries most deeply interested in the problem met in London from December 5th to December 14th, 1922.

With this meeting in view, the Health Service had prepared a report summarising statistical and legislative documents relating to twenty-seven different countries (live-stock census; cases of anthrax in animals; cases — arranged according to occupation and industry — of persons suffering from anthrax and legislative measures) and including a full and detailed statement of the methods employed in the disinfection of animal products (wool, hides, hair) and also of the methods adopted to prevent the spread of the disease among animals. The documents forming this report were placed at the disposal of the Committee. In addition to this, the Committee, on the invitation of the British Government, visited the centre, which had been opened at Liverpool, for the disinfection of wool suspected of infection.

Having regard to the importance of the prophylactic measures against anthrax in animals, the Committee recommended that the International Labour Office should go fully into this question in co-operation with the Rome International Institute of Agriculture, with a view to dealing with the matter by international action. It further suggested that the International Labour Office, acting in conjunction with the Health Committee of the League of Nations, should organise, on international lines, investigations into the hides industry and should request the countries and organisations chiefly concerned to undertake, each in its own special province, investigations with the object of issuing special prophylactic measures for the benefit of workers in this industry.

Apart from the important investigations which were the outcome of the consideration of the two questions of white lead and anthrax, the Health Service published in its series known as "Studies and Reports" several pamphlets on various industrial health problems, the physiology of labour, pathology, health, and public relief, in so far as these matters are factors in industrial health.

Of these publications mention may be made of the investigation into "*Cancer of the Bladder among Workers in Aniline Factories*" and the larger report, dealing with the "*Problems of Industrial Lighting*" which discusses in detail the questions of natural and artificial lighting, the conditions of a satisfactory system of lighting workshops and offices, the problem of eye fatigue and the detection of defective vision when choice is being made of a trade or profession. This pamphlet indicates the measures recommended for the protection of eyesight and for thus safeguarding the health and safety of the workers, and it also contains the various laws which have been enacted on this question. The Health Service also prepared a report on "*Conditions of Hygiene and Health of Italian Railwaymen*", and another on the "*Rag Sorting*"; and it will publish at an early date, in the "*International Labour Review*", the results of an investigation on "*Industrial Risks of Engravers*".

The Health Service has also considered two important problems which were submitted to it by the Washington Conference, the drawing up of a "list of unhealthy trades" and the enquiry into the organisation of the "medical inspection of labour".

The question of *unhealthy trades* has engrossed the attention of sanitary specialists and legislators for a long time past. Indeed, as soon as the problems relating to the general conditions of labour (ventilation, lighting, heating, etc.), are removed, the whole question of the pathology of labour turns in the main upon toxic products or harmful processes. Though certain groups of industries cannot at present be rendered wholly immune from danger to

health, they may be subjected to special regulations. These regulations have, to a large extent, been adopted by the more far-seeing employers, who are fully alive to the benefit which may thereby be conferred on the industry.

At this point it would be well to call attention to the success of the efforts made in this direction by the "International Association for the Legal Protection of Workers".

During the Washington Conference, the Commission on Unhealthy Trades felt greatly embarrassed, as was mentioned in its report, by the absence of any definition of what constitutes an "unhealthy trade".

While regretting that it had not been able to deal with all cases coming under this definition, the Commission on Unhealthy Trades adopted the following resolution:

"The International Labour Office should be requested to draw up a list of the principal trades which are to be regarded as unhealthy trades."

This resolution, moreover, was in complete agreement with the recommendation of the Organising Committee of the Conference, in its Third Report:

"That the International Labour Office be instructed to continue its enquiries into the question, as it is of concern to all workers, male and female..."

Again at the suggestion of one of the delegates, the Conference, at a plenary meeting, indicated the views which it held on the nature of this work:

"This work should not consist solely of an enquiry into the essential principles of the question; it should entail full consideration of the special precautions which should be adopted in each industry, thus involving the examination of a large amount of statistical, clinical, and medical data."

Present day legislation in respect of unhealthy trades is of a most varied character; and, although science is continually making new discoveries, and solving problems which were hitherto held to be insoluble, industrial technique, by the changes it undergoes and by the employment of new products and new processes of manufacture, can create further unhealthy conditions.

The main question hitherto has been that of drawing up a list of "industrial poisons"; but the problem is now rather that of compiling a list of unhealthy processes. The Health Service has, accordingly, taken a rather special view of the work to be undertaken.

It is of opinion that it would be desirable to examine, in an introductory section, all questions of a general character which may arise. These will include toxicology, general measures for the improvement of health, protective measures, medical attendance, personal hygiene, first aid, etc. At the end of this part of the report there will be a chapter on the fundamental principles underlying the control of unhealthy industries.

The subjects (unhealthy industries and trades, and physical, chemical or biological factors in unhealthy conditions) will be dealt with in separate articles, arranged in alphabetical order in accordance with a double system of reference, *i.e.*, by industries and also by toxic products. This will render the work more complete, and will prevent repetition.

In the cases of industries, the main article will naturally be found under the heading (name of industry, process or product) which best illustrates the danger of the work, and the technology of an industry will only be given when its characteristic product has not been dealt with under another heading. This, for instance, will be the procedure adopted in the case of the tanning, glass and mirror-making industries, etc.

In the case, however, of toxic products such as lead, mercury, benzene or their compounds which deserve special mention, because the manner in which they are prepared, their toxic properties or their use are particularly dangerous, all details will be given, which have any bearing on the respective industrial processes, and the various ways in which they are employed. The following arrangement has been adopted for each article: a schedule of the names under which it is known in science and commerce (translated into the best known foreign languages), the chemical formula, the most important physical and chemical properties, the processes of manufacture, the principal drawbacks and dangers of each separate process, and also a list of the industries in which the product is employed, or in which the workers are exposed to its harmful effects. The question of special prophylactic measures, the improvement of health conditions in workshops, and in the industry itself, will be dealt with either as a whole, or in connection with each separate process, according to circumstances. After this, there will be a short but complete article on the pathology, the methods of tracing and identifying the toxic products either in the place where the process is being carried on, or in the organism, or in the excreta (urine, faeces, etc.), and, lastly, special prophylactic measures. At the end of the article will appear a summary of the special legislation which applies to each product or industry.

As such legislation is very different in each country, it will be collected and arranged as far as possible under general headings, such as the conditional exclusion or admission of women and children, special steps taken in connection with the subject dealt with, notification of occupational diseases and their relationship to accidents.

Special care will be taken as regards technical and medical sections to steer a middle course between extreme conciseness, which would render the work incomprehensible to the laymen, and too great a wealth of detail, which would be understood only by experts, and for whom, it would be unnecessary.

Numerous cross references will assist the reader in both series, and will enable him to discover in the alphabetical list the processes or products quoted in the main article. An analytical table of trades will be given in a supplementary pamphlet, and cross references will render it easy to identify the articles in which these trades are mentioned. Finally, a

kind of annex, which will be given after certain published parts, will include all data which are not of essential importance, but are, nevertheless, of interest in connection with some special industrial process (statistics, photographs, measures adopted by private industry, etc.).

It is impossible in an international work of reference to adopt straight away a system of alphabetical arrangement. The list which the Health Service had drawn up comprises at present several hundred entries. It is the intention of the Health Service to prepare and publish the article on each subject when it has at its disposal the most detailed information possible from a technical as well as from a hygienic and pathological point of view. The examination and classification of successive parts will, however, be greatly facilitated by their being published in pamphlet form with a special system of numbering in accordance with a prearranged plan.

This is a formidable undertaking. In order to carry it out, members of the Advisory Committee will have to assist in obtaining and collecting the documents concerned with the particular branch of the subject in which they specialise. But whatever means for obtaining information and documents are placed at the disposal of the Health Service, and, however efficient its staff may be from a technical point of view, it cannot possess an encyclopædic knowledge of all the questions to be dealt with. It will, therefore, have to obtain the collaboration either of members of the Committee who specialise in certain subjects, or of other well-known experts, in order to collect the necessary data, or, better still, reports of a documentary nature capable of forming a groundwork for the elaboration of certain special articles.

On the basis of such documentation, the Health Service could then proceed to draw up final texts, which would be published in the two official languages of the International Labour Office (French and English), and, if necessary, in other languages, according to circumstances and needs, and the means available at the time.

There is one last point to emphasise — the impossibility at present of drawing up a complete list of all processes in which products are used, which are different from those that specially characterise the industry, and which may become a source of industrial poisoning, renders it necessary that the list should regularly undergo revision, at short intervals, and should be constantly brought up to date. Publication in separate parts offers from this point of view a great advantage, in that it renders it possible to make the necessary corrections and additions, as required.

As regards the *medical inspection of labour*, the need for such action has long been recognised, and the opinion has also long been held that administrative control to ensure that the regulations are obeyed is not sufficient, but that health measures should be extended so as to apply both to the process and to the workman; above all, the staff should undergo regular medical inspection, particularly in the case of unhealthy industries, in order that the preliminary symptoms of intoxication may be traced and detected. Regular periodical inspection is the only effective measure to ensure the protection of the workers' health, and to bring to light the causes of unhealthy conditions, before it is too late.

We may reasonably hope that permanent researches carried out by qualified medical inspectors will eventually lead to some real improvement in the conditions of industry. In proof of this contention, we need only refer to the great practical value of the work already accomplished in this connection by qualified medical inspectors, particularly in England and Belgium.

The need for medical inspection was clearly brought out at the Washington Conference, which adopted a Resolution in this connection, to the effect that:

“ Each member of the International Labour Organisation, which has not already done so, should establish as soon as possible not only a system of efficient factory inspection, but also, in addition thereto, a Government service especially charged with the duty of safeguarding the health of the workers, which will keep in touch with the International Labour Office. ”

The Commission on Unhealthy Processes expressed a hope that the Industrial Health Service of the International Labour Office would maintain constant relations with the Health Services attached to the Government Departments, concerned with enforcing the application of legislation regulating labour in the different countries.

Various Governments, moreover, being desirous of putting this Resolution into effect, have asked the International Labour Office for information concerning the organisation of the Medical Inspection Services, which have been set up in certain countries, and the relationship between these Services and the Services for the technical inspection of working conditions. For this purpose, therefore, a questionnaire was prepared by the Health Service, in collaboration with other Sections of the Office (Legal Section, Statistical Section, etc.); and was sent out in May 1922 to the various Governments. On the basis of the replies received, the Health Service is now drawing up a general report from which it will be possible to establish a number of guiding principles for the work of organisation. It would be a matter of great satisfaction if this enquiry were to result in a uniform organisation of the Services in question in all countries which are Members of the International Labour Office.

In connection with another question, which is closely allied to the inspection of working conditions, namely, the *notification of occupational diseases*, and the *payment of compensation* in respect thereof, the Washington Commission on Unhealthy Processes displayed equal eagerness for regulation and unification by making the following recommendation: — “that incapacity to work occasioned by occupational disease should entitle the sufferer to receive compensation, in the same way as incapacity resulting from accidents in the course of his employment, and that doctors should be compelled to notify all cases of occupational disease”.

This is a question which the Office should take up and examine.

At the suggestion of M. Arthur Fontaine, President of the Governing Body of the International Labour Office and President of the Commission on the Physiology of Labour at the Lannelongue Institute in Paris, the Office formed the opinion that it would be desirable to study the question of fatigue—a problem which is at present on the agenda,—and to compile for reference only a list, of a purely objective character, of various *fatigue tests*.

This list will include tests, which are based on physiological and psychological phenomena (physic-psychological tests), and tests founded on the effects produced by fatigue on work and factory life (output, accidents, morbidity, fluctuations in staff, unsatisfactory work, loss of time, etc.). The Office is in correspondence with the Lannelongue Institute in Paris, with a view to collecting the necessary documentation.

In connection with the same subject, the Health Service is following with the closest interest the present tendencies of professional opinion, as regards the medical aspect of the question (physiological and psychological aptitude tests).

We should add that the Health Service is in very close touch with the Health Organisation of the League of Nations, and that it is required to act in concert with this organisation as regards all questions affecting general hygiene. The close relations existing between the two institutions increase the effectiveness of this co-operation, and the Head of the Health Service of the International Labour Office sits on the Health Committee of the League of Nations, while the Director of the Health Section and the Chairman of the Health Committee of the League of Nations sit on the Advisory Health Commission of the International Labour Office. Finally, mention should be made of the principal organisations which collaborate with the Service, namely, the International Office of Public Hygiene in Paris and the League of Red Cross Societies.

In addition to the special and definite work entrusted to it, the Service is required to maintain an up-to-date knowledge of technical and scientific questions affecting labour. It has, therefore, to keep in touch with numerous problems connected with industrial hygiene and medical science, and to act as intermediary between the different official and private organisations, which deal with these questions in the various countries.

In addition to collaborating with the “*Revue Internationale du Travail*” by providing special articles, treatises on problems of current interest, and analyses of technical reports and works on industrial hygiene, the Service prosecutes its work of propaganda by establishing a *bibliography*. In so doing, the Service is only carrying on a task begun long ago by other organisations, and, ever since its formation, it has attached great importance to the continuation of the work, which is of recognised utility. Its efforts are directed towards the compilation of a bibliographical index arranged according to subjects, and this index already includes many thousands of entries. The first index lists were published in 1922, in the “*Revue Internationale du Travail*”. At the request of certain persons, special lists were drawn up for particular subjects. These bibliographical indexes, which are daily becoming more numerous, will henceforth be published in separate booklet form; the first was published in March 1923, and it contains 590 bibliographical references; the second, now ready for publication, will contain an equal number.

Finally, the Service is engaged in drawing up, collaterally with its bibliography of books and publications, an “index catalogue” of films connected with labour and industrial hygiene, in particular.

May 4th, 1923.

(Signed) CAROZZI.

Annex 7.

C. H. 105.

PROPOSAL BY THE NETHERLANDS GOVERNMENT REGARDING THE EXAMINATION OF SHIPS IN PORT.

Letter dated April 6th, 1923, from the Dutch Minister at Bern to the Secretary-General of the League.

Sir,

May I submit to you the following question?

By virtue of Article 3, paragraph 6, of the Royal Decree of January 3rd, 1923, (Code No. 34) concerning the carrying out of the law against the risk of infection carried by vessels arriving from the high seas, decree of which I beg to annex a copy, vessels are exempted from sanitary examination when they have been admitted to free circulation in certain ports designated by the Minister of Labour, Commerce and Industry.

It is in the interest of international shipping that this exemption should be as wide as possible.

On the other hand, the Dutch Government experiences some difficulty in forming an opinion as to the actual value of the sanitary examination in various ports; the Dutch Government is, therefore, of opinion that this work would be more easily accomplished by an international organisation.

In consequence, my Government, bearing in mind that other countries are faced with the same difficulties, has considered whether the League of Nations (either the Health Committee, or the Health Section of the Secretariat) could be entrusted with the task of examining, which ports are in a position to carry out the necessary sanitary examination and subsequent measures.

The Dutch Government, and, eventually, other Governments, could then, on the basis of a declaration by the League of Nations, grant an exemption in the sense of that outlined by Article 3, paragraph 6.

At the request of Jonkheer von Karnebeek I herewith beg to inform you of the above, and to request your opinion on the subject.

I await your answer, and have the honour to be,

For the Minister :
(Signed) A. BAUD.

Letter dated April 17th, 1923, from the Secretary-General of the League to the Dutch Minister at Bern.

Sir,

The technical examination of the problem raised in your letter of April 6th, 1923, concerning the procedure in connection with the sanitary examination in the ports and the conditions under which exemptions could be granted to vessels, would appear to me to belong, without any doubt, to the competence of the Health Organisation of the League of Nations.

In consequence, I shall be very glad, subject to the authorisation of the Dutch Government, to bring your letter to the notice of the President of the Health Organisation, or to hand over to him any communications from your Government on the subject.

The next session of the Health Committee will take place in Paris on May 26th. Were the question raised in your letter to be put on the Agenda, it would be very desirable that an expert in possession of a full knowledge of the views of the Dutch Government should take part in the discussions of the Committee.

(Signed) ERIC DRUMMOND,

Secretary-General.

Letter dated May 22nd, 1923, from the Dutch Minister at Bern to the Secretary-General of the League

Sir,

In your letter of April 17th, 1923, you were kind enough to inform me that you would be glad, subject to the authorisation of the Dutch Government, to submit to the Chairman of the Health Committee my note of April 6th last, No. 1606, concerning the procedure to be followed in connection with the sanitary examination in ports and the conditions under which exemptions could be allowed to vessels. You also offered to transmit any other communications from my Government on the subject.

In reply to your letter afore-mentioned, I have been instructed to inform you that the Minister for Foreign Affairs at the Hague will be pleased if you will kindly bring the contents of my note of April 6th to the knowledge of the Chairman of the Health Committee.

My Government has nominated as an expert on this question M. le Dr. Josophus Jitta, President of the Dutch Health Board, who will be in Paris on the 26th instant.

I have the honour, etc.,

(Signed) VAN PANHUYS.

Annex 8.

C. H. 89.

INTERNATIONAL INTERCHANGE VISIT OF PUBLIC HEALTH OFFICERS TO ENGLAND.

Report by Sir George Buchanan, submitted to the Committee on June 4th, 1923.

(1) I have the honour to present the following report on the international interchange visit of Public Health Officers, which took place in England from February 25th to April 11th, this year.

(2) The delegates taking part in the interchange numbered 29. They came from the following countries :

Austria (2), Belgium (2), Czechoslovakia (1), Denmark (2), Finland (1), France (3), Hungary (1), Italy (2), Japan (2), Norway (1), Poland (3), Roumania (1), Russia (3), Serbs-Croats-Slovenes (2), Sweden (1), United States of America (2).

(3) The arrangements for the visit followed the plan which I outlined to the Health Committee at their meeting on January 11th. They differed from those of earlier interchanges in being conducted by an organisation independent of the Government, namely by " the Society of Medical Officers of Health ", which includes among its members Public Health Officers of Counties, Boroughs, Municipalities, Urban and Rural Districts etc., in all parts of the United

Kingdom. The President and Council of this Society generously acceded to my proposal to place the organisation and conduct of the tour in their hands; accordingly, a representative of the Society attended the closing conference of the first interchange, the Medical Director of the League's Health Section was good enough to attend a meeting in London at which the plan of the interchange was explained to members of the Council of the Society, and the Council appointed a Committee to undertake the responsibility for the arrangements and expenditure. Dr. Howarth was the experienced and energetic Chairman of this Committee. The Executive Secretary of the Society (Mr. G. S. Elliston, M. A.) placed his services and those of his staff wholly at the disposal of the Committee for the duties to be undertaken. I was a member of the Committee and acted as intermediary between it and the Health Section. The Ministry of Health fully approved these arrangements and officially expressed to the Society of Medical Officers of Health their confidence that all Local Authorities would be very willing and ready to give every assistance in their power to make the scheme a success. In addition, the Ministry itself agreed to undertake a part of the work of instruction and demonstration in London; in pursuance of this arrangement the delegates were officially welcomed at the Ministry on February 26th by Lord Onslow on behalf of the Minister of Health of England and Wales, who was unavoidably absent from London, and by Captain Elliot, M. P., Under Secretary of State for Scotland, on behalf of the Scottish Board of Health. This official reception was followed by an address by Sir George Newman, Chief Medical Officer of the Ministry, and by lectures and demonstrations by other members of the Ministry's Staff. The medical Library of the Ministry was placed at the disposal of the delegates during their visits to London and arrangements were made for supplying them with literature and explaining points of detail in connection with particular subjects.

(4) In broad outline the programme adopted after mutual consultation and discussion provided, firstly for a study in London of the scheme and machinery of English Central and Local Public Health Administration in all its aspects, secondly for the division of the party of delegates into small groups to proceed separately to four or five selected provincial areas for practical study of health conditions and arrangements in a large city, a county, an agricultural or industrial district and, in some instances, a large port; thirdly, for a return to London to study the quite different problems and arrangements in that city, and to collect and discuss results.

(5) The preliminary study in London lasted from February 26th, to March 3rd, the work in the provinces from March the 4th to 28th, and the final study in London occupied the week ending April 11th.

(6) Having in view that the officers and members of the Society of Medical Officers of Health, who personally conducted and were responsible for the courses of instruction and the practical work, have been good enough to report in full upon those matters it seems preferable to present their reports to the Committee in original, rather than to summarise them here. I therefore beg to present as annexes the following documents and reports which are available for personal study by any Member of the Health Committee:

(1) The programme of the first period of study in London (Annex 2).

(2) A general account by Mr. G. S. Elliston (the Executive Secretary of the Society of Medical Officers of Health) of the proceedings during the first period of work in London and a statement of the grouping and departure for the provincial centres where local health conditions and administration were to be studied in detail (Annex 3).

(3) The programme of the final period of study in London (Annex 4).

(4) A general account by Mr. G. S. Elliston of the proceedings of the final period of work in London (Annex 5).

(5) A concluding report by the organising Committee which, as already mentioned, was appointed by the Society of Medical Officers of Health to undertake the arrangements and conduct of the Interchange (Annex 6).

(6) The several programmes and reports relating to the practical work in the selected areas in the provinces, namely:

(a) Synopsis and Report by Dr. R. W. Clark, Medical Officer of Health of Manchester, of the work of the group in that area (Annex 7).

(b) Synopsis and Report by Dr. Hope, Medical Officer of Health, City and Port of Liverpool, of the work of the group in that area (Annex 8).

(c) Synopsis and Report by Dr. John J. Buchan, Medical Officer of Health of Bradford, of the work of the group in Bradford and the West Riding of Yorkshire (Annex 9).

(d) Synopsis and Report by Dr. H. Kerr, Medical Officer of Health, Newcastle, of the work of the group in Newcastle and County Durham (Annex 10).

(e) Synopsis and Report by Dr. John Robertson, Medical Officer of Health, Birmingham, of the work of the group in that area (Annex 11).

(f) Synopsis and Report by Dr. Chalmers, Medical Officer of Health of Glasgow, of the work of the group in that area. (Annex 12).

(7) A statement prepared and signed on the conclusion of the Interchange visit to England by the several delegates taking part in the Interchange, and communicated by them to the correspondence columns of "The Medical Officer" in which journal it was published on April 14th, 1923 (Annex 13).

(8) In a separate cover a complete set of copies of the literature relating to various branches of health work in England with which the delegates were provided at the Ministry of Health and elsewhere in London to supplement the lectures and demonstrations. This literature includes a booklet "Notes on Public Health Organisation in England" which was specially prepared by Dr. Charles Porter at the request of the Society's Interchange Committee to aid the delegates in their study of the development and present position of the somewhat complex British Health Organisation and machinery.

(7) It only remains for me now to mention some of the conclusions which seem to emerge from a review of the reports and opinions as stated in the notes forwarded by the officers who personally superintended and conducted the course and as expressed by the delegates themselves at the final conference on April 10th, in London at which I presided. At this conference which was attended by Mr. Gunn of the Rockefeller Foundation, Dr. Rulot of the League of Nations Health Secretariat and Dr. Porter of the Society of Medical Officers of Health Committee, I invited the delegates to make any observations which they desired on the course and especially to say :

- (1) Whether on the whole they had found the course satisfactory and profitable ;
- (2) Whether they thought such general courses as this should be supplemented by individual or specialist courses ;
- (3) How often the repetition of these general courses is desirable ;
- (4) What suggestions they would make as a result of their experience for improvements in a future general course in England.

Without exception all the delegates expressed much satisfaction with the whole arrangements for the course and testified to the great interest and advantage which they had derived from it. Observations in the same sense were contained in the communication from the delegates which was published in the official journal of the Society of Medical Officers of Health ("The Medical Officer", April 14th, vide Annex 13).

Also I may note that the organising Committee appointed by the Society of Medical Officers of Health have reported to me that in their view the course was completely successful and that they have been authorised to place the whole organisation of the Society at the disposal of the Health Section of the League at any time that it may be desired to arrange a further course of instruction for foreign health officers in Great Britain. They state that the Society attaches so much value to the whole scheme, that they will regard it as a privilege to accept responsibility for the local organisation of courses, general and special at any time (Annex 6).

(8) Without further elaboration we may therefore rest assured, I think, that considered from the general point of view, the Interchange in England and Scotland was a great success.

(9) But some important points of constructive criticism brought forward by the officers who personally conducted the courses, by the Committee of the Society, and in some instances by the delegates individually, must not be overlooked. There is no difference of opinion as to the desirability of continuing to provide for "general" courses, but I think it is widely felt that :

(a) Not all countries are in a position at present to arrange a satisfactory course of this general kind ;

(b) Whatever country is selected, at least six months' notice of the course should be given. Among other reasons this is desirable in order that selected delegates may study the language prior to their visit ;

(c) The literature relating to the course should be circulated in advance ;

(d) Great care must be taken to select the men whose appointments in their own countries indicate that such a general course would be profitable to them ;

(e) Specialist study of particular subjects, and reports on such subjects, should not be required of delegates attending a "general" course designed to deal with Public Health arrangements as a whole.

In this formal report, I do not propose to enter into details on these important points.

(10) Secondly, the reports and discussions seem to me to have brought out clearly that there is a widespread desire for "specialist" courses either of a collective or individual nature. Indeed I think it probable that if all the individuals who have hitherto attended the Interchange general courses had had a choice in the matter the majority would have chosen a specialist course. The general course is one that appeals most to the senior members of the Public Health Service who are concerned largely with administration, and in my opinion, both the facilities available for a general course in the country chosen and the men selected, must be very carefully considered. If the country chosen has not already been visited, the plans of the Interchange must be thoroughly worked out by local enquiry a considerable time in advance. There are perhaps only a few countries in which a "general" course which would be entirely satisfactory could be profitably arranged, but almost every country is in a position to provide a satisfactory "special" course on some Public Health matter or another. On the whole, I am inclined to consider that for the immediate future the "general" courses should be limited to a few countries where carefully worked out arrangements can be made, and that more attention should be devoted to specialists courses, both collective and individual, which cover a much narrower sphere of work, and are of such a nature that there is no doubt of their immediate practical utility to the particular specialist officers who alone will attend them.

Annex 9.

C. H. 88

THE MIXED SUB-COMMITTEE OF THE HEALTH COMMITTEE AND OF THE ADVISORY COMMITTEE ON TRAFFIC IN OPIUM.

Explanatory Note submitted to the Health Committee by Dr. H. Carrière on Dr. Anselmino's Memoranda (Questions relating to the control of narcotics).

At its meetings at Geneva in January 1923, the Mixed Sub-Committee on Opium (Dr. Chodzko, Prof. Santoliquido and Dr. Carrière of the Health Committee and Dr. Anselmino and Mr. Campbell of the Advisory Committee on Opium) chiefly considered the methods, which should be employed to ascertain the legitimate needs of a country in respect of narcotics.

The various methods proposed were briefly explained in the report which the Opium Sub-Committee presented to the Health Committee at its meeting on January 13th, 1923 (see Minutes of the 5th Session, page 78, Annex 11). We would recall that it was proposed to make use of :

- (1) The statistics concerning importation, production and exportation ;
- (2) The information obtained by direct enquiries among chemists, hospital authorities, doctors, dentists and veterinary surgeons ;
- (3) The figures of general morbidity established on the basis of the statistics of health insurance associations and the figures of annual consumption per patient supplied by the hospitals.

The Committee adopted the proposals set out in our report ; it also recommended that the enquiries in question should be prosecuted with the least possible delay, and, at the suggestion of Dr. Chodzko, that the supply of narcotics from centres of production should be subjected to very strict supervision on the part of the Health Authorities in conjunction possibly with the Mixed Commissions mentioned in the resolution adopted by the Advisory Committee on Opium at its meeting in May 1922.

It should be remembered that the Mixed Sub-Committee considered it desirable, in order to establish a definite basis for the enquiries, to define what was meant by the term "legitimate needs, and adopted a resolution to the effect that the only legitimate needs were medical and scientific needs — a definition which led to reservations on the part of Mr. Campbell, the Indian representative, and, in the Health Committee itself, on the part of Sir George Buchanan.

As soon as the methods of enquiry had been agreed upon in principle, the Mixed Committee on Opium requested Dr. Anselmino to investigate the manner in which they could be applied in practice. The results of this investigation are summarised in a questionnaire, drawn up by Dr. Anselmino, which we forwarded to the Health Committee, and which the members of the Committee have had an opportunity of studying.

It was then necessary to arrange for the carrying out of these enquiries. It seemed advisable to entrust this work to some one who would collaborate for the time being with the Health Section, and Professor Knaffl-Lenz, reader in pharmacology at the University of Vienna, was invited to come to Geneva for this purpose. He entered upon his duties at once, making use of the documents and other information which had so far been collected, and the first results of this investigation were embodied in a memorandum, which has been forwarded to us and which may be used as a basis for the subsequent work of the Mixed Sub-Committee.

As regards, in particular, the methods of enquiry, Dr. Knaffl-Lenz suggests a method by which information supplied by hospital authorities, chemists and doctors may be utilised which would have the effect of ensuring the accuracy of the information given ; namely, not to authorise chemists to supply narcotics except on presentation of prescriptions of a form and colour to be decided upon by the Health Authorities, and varying according to the nature of the prescribed remedy. Doctors would be supplied with a fixed number of these prescriptions, and chemists would be required to send them back every month accompanied by a form on which the quantities prescribed and delivered would be set out. We are arranging for a trial of this method in one of the Swiss Cantons. We are also going to apply, by way of experiment, the method which consists in utilising the statistics of health insurance associations, and the figures of consumption supplied by hospitals, and we have chosen for this purpose the Canton of Basle-Ville, which is better adapted than any other to an enquiry of this kind.

It will be seen from this short statement that the preparation of the questions to be submitted to the Mixed Sub-Committee is already well advanced, and that the Sub-Committee will certainly be able to discuss them with every hope of achieving satisfactory results.

It has not been forgotten that the French Government asked that the provisions of the Hague Convention should be extended to cover a whole series of substances, which produce effects similar to those produced by opium and its derivatives, and by cocaine. Further, the Advisory Committee on Opium adopted at its last meeting a resolution, which also enumerated certain products recommended for inclusion in the international Hague Agreement. Dr. Anselmino likewise examined this question and wrote a memorandum on it dated July 12th, 1922, which was forwarded to the members of the Committee. In the meanwhile, the Council of the League of Nations adopted, at its meeting on February 1st, 1923, the following resolution :

" That the observations of the Governments on the list of drugs submitted to the French Government, which are not included in the Convention (i.e., the Hague Convention) be referred to the Joint Sub-Committee for consideration and report

This question is, therefore, to be brought before the Mixed Sub-Committee at its next session, and we will duly inform the Health Committee of the results of the discussion which takes place on this subject.

Bern, May 6th, 1923.

(Signed) Dr. H. CARRIÈRE,
Director of the Federal Department
of Public Health.

Annex 10.

C. H. 80.

CORRESPONDENCE WITH THE PAN-AMERICAN SANITARY BUREAU.

Letter from Surgeon-General H. S. Cumming to Dr. Rajchman.

WASHINGTON, March 15th, 1923.

MY DEAR DOCTOR RAJCHMAN,

Referring to Part IV of your letter of January 27th, with reference to the International Sanitary Bureau of the Pan-American Union at Washington, I have had prepared for you a short historical sketch of its inception and just what it has been supposed to do. It seems to have been started very much for the same object as the Office International, but has perhaps been somewhat less successful in accomplishing its objective.

I was elected Director at the meeting in Montevideo a year or two ago, and found that the office here had become latent. I detailed one of our officers, who is familiar with the Latin languages, to the office, and it has since that time been furnishing bulletins in Spanish upon such subjects of interest to South American countries as malaria and child welfare. I am not at all in favour of any overlapping or duplicating agencies to do the same work, and I am cognizant of the fact that the Office International and the League are world wide in their scope. Still, I feel that such a union as this can deal with questions, which particularly affect the countries of this continent, and at the same time co-operate with and be useful to both the League and the Office International. I am conscious of the fact that an exchange of publications between this office and the League will be for the time being rather one sided.

Dr. Rowe, who wrote the letter to you, is the Director of the Pan-American Union, which serves as a clearing house for diplomatic and other matters pertaining to countries of the American continent. I am rather inclined to believe that, as I am in close touch with the Office International, with the Health Committee of the League and with the International Sanitary Bureau, that I shall be able to co-ordinate the efforts of the three bodies.

(Signed) H. S. CUMMING.
Surgeon-General.

THE INTERNATIONAL SANITARY BUREAU AND THE INTERNATIONAL SANITARY CONVENTION
OF PAN-AMERICAN REPUBLICS.

The International Sanitary Bureau of the American Republics was created by the Second International Conference of the American States, held in the City of Mexico, October 22, 1901, to January 22, 1902. This conference adopted a series of resolutions relating to international sanitary policy and providing, among other things: (1) that a general Convention of representatives of the health organisations of the different American Republics should be called by the Governing Board of the International Union of the American Republics (now the Pan-American Union), to meet at Washington, D. C., within one year of the date of the adoption of the resolutions by the Conference; (2) that each government represented at this conference should designate one or more delegates to attend such conference; (3) that authority should be conferred by each government upon its delegates to enable them to join delegates from other republics in the conclusion of such sanitary agreements and regulations as in the judgment of said conference might be in the best interests of all the republics represented therein; (4) that voting should be by republics; (5) that each republic represented should have one vote; (6) that the Convention should provide for the holding of subsequent sanitary conventions at such times and at such places as might be deemed best by the Convention; (7) that it should designate a permanent, active Board of at least five members, who should hold office until the next subsequent Convention, and that this executive Board should be known as the International Sanitary Bureau, with permanent headquarters at Washington, D. C.

It was further provided that in the interest of economy the Bureau of American Republics (now the Pan-American Union), should be utilised by the conventions and by the International Sanitary Bureau to the fullest extent possible for the correspondence, accounting, disbursing, and the preservation of records incident to the work comprised within these resolutions. The

States signatory to these resolutions were Bolivia, Colombia, Costa Rica, Chile, the Dominican Republic, Ecuador, El Salvador, the United States of America, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Peru and Uruguay.

The first general International Sanitary Convention of the American Republics, pursuant to these resolutions adopted by the Second International Conference of the American States, was held in the City of Washington, D. C., December 2nd, 3rd and 4th, 1902, under the auspices of the Governing Board of the International Union of the American Republics. There were present delegates from Chile, Costa Rica, Cuba, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Uruguay, and the United States. At this meeting, permanent organisation was effected by providing for and electing a President (of the Convention) one Vice President for each Republic represented, a Secretary, and an Advisory Council of six delegates, the President being made ex-officio the presiding officer of the Council. Upon recommendation of the Advisory Council, the International Sanitary Bureau was increased from five to seven members, and the following were appointed members of that Bureau :

Surgeon-General Walter Wyman, of the Public Health and Marine Hospital of the United States, Chairman ;
Doctor Eduardo Liceaga, of Mexico ;
Doctor Eduardo Mooro, of Chile ;
Doctor Juan Guiteras, of Cuba ;
Doctor Juan J. Ulloa, of Costa Rica ;
Doctor Rhett Goods, of the United States ;
Doctor A. H. Doty, of the United States.

The resolutions passed at Mexico City were accepted as the basis of work of the first convention of 1901, which was of a character chiefly scientific and resulted in the adoption of certain sanitary and hygienic principles and the establishment of an International Sanitary Bureau at Washington.

Resolutions of First Convention.

This first Convention adopted resolutions concerning the time of detention and methods of disinfection at quarantine, measures to destroy the yellow fever mosquito, measures to control typhoid fever, cholera, etc.

Among the most important resolutions passed was the following, namely :

“ Whereas, the Second International American Conference of the Pan-American States, held in the City of Mexico, October 1901, to January 1902, provided that a sanitary convention should be held in Washington within one year from the signing of the resolutions on sanitation and quarantine, and should elect an International Sanitary Bureau with permanent headquarters at Washington for the purpose of rendering effective service to the different Republics represented at this convention ;

“ (a) *It is hereby resolved* : That it shall be the duty of the International Sanitary Bureau to urge each Republic to promptly and regularly transmit to said Bureau all data of every character relative to the sanitary conditions of their respective ports and territories ;

“ (b) And to furnish said Bureau every opportunity and aid for a thorough, careful, and scientific study and investigation of any outbreaks of pestilential diseases which may occur within the territory of any of the said Republics ;

“ (c) *It is further resolved*, That it shall be the duty of the International Sanitary Bureau to lend its best aid and experience toward the widest possible protection of the public health of each of the said Republics in order that disease may be eliminated and that commerce between said Republics may be facilitated ;

“ (d) *It is further resolved by this Convention*, That it shall be the duty of the International Sanitary Bureau to encourage and aid or enforce in all proper ways the sanitation of seaports, including the sanitary improvements of harbours, sewage, drainage of the soil, paving, elimination of infection from buildings, and the destruction of mosquitoes and other vermin ;

“ (e) *It is also recommended by this convention*, That, in order to carry out the above measures, a fund of \$5000 shall be collected by the Bureau of American Republics in accordance with paragraph 7 of the resolutions of the Second International American Conference above referred to.”

The Second International Sanitary Convention.

The Second International Sanitary Convention, called by the Chairman of the International Sanitary Bureau, was held in Washington from October 9th to 14th, 1905, and assumed a more formal character than the previous one. This Convention resulted in the subscription to a Sanitary Convention *ad referendum* concluded on October 14th, 1905, which codified all the measures destined to guard the public health against the invasion and propagation of yellow fever, plague, and cholera. This Sanitary Convention *ad referendum* was, prior to December 1907, ratified by at least nine Republics. It was provided that governments, which had not signed the Convention, were to be admitted to adherence thereto upon demand, notice of this adherence to be given through diplomatic channels to the Government of the United States of America and, by the latter, to the other signatory Governments.

The Third International Conference of American States.

The Third International Conference of American States, held in Rio de Janeiro, in August 1906, recommended the adoption of the Sanitary Convention by all the countries therein represented and indicated, among other measures, matters for consideration by the Sanitary Convention to be held in the City of Mexico in December 1907.

Resolution Adopted.

Among other resolutions adopted at Rio de Janeiro by the Third American International Conference were (1) that (as a rule) the countries represented at Rio de Janeiro should adopt the International Convention of Washington, adhering to the same and putting its precepts into practice ; (2) that they should adopt the measures intended to bring about the sanitation of cities and especially of ports, as well as to disseminate, as far as possible, a better knowledge of, and effect a better observance of hygienic and sanitary principles. The Third International Conference of American States also expressed the desirability of having all American countries represented at the coming International *Sanitary Convention* which was to be held in the City of Mexico in December 1907. It further proposed (a) that the respective delegates to the Sanitary Convention should be asked to study and suggest practical means for securing the adoption of measures intended to effect the sanitation of the cities and especially of seaports ; (b) the establishment in each of the American countries of a commission composed of three public medical and sanitary officials in order that under the direction of the International Sanitary Office, established in Washington, these might constitute an international bureau of sanitary information throughout the American Republics, with power to collect and communicate all data relating to public health and such others as to the Conference might consider desirable. The Conference of States recommended the establishment and organisation in such place in South America, as the International Sanitary Conference might designate, of a Bureau of Sanitary Information. The purpose of this Bureau would be to furnish to the International Sanitary Bureau (at Washington), the necessary data to comply with recommendations relative to sanitary police (adopted by the Second International Conference), and also to establish relations between the International Sanitary Bureau existing in Washington and the Bureau Sanitaire International of Paris, these co-operative measures being designed to obtain the best information possible on sanitary subjects and conditions and to reach agreements which would facilitate the objects for which both offices were established. The City of Montevideo was designated as the permanent site of the Bureau of Sanitary Information. This Third Conference also drew up a provisional programme for the International Sanitary Convention in Mexico City in December 1907.

The Third International Sanitary Conference.

The Third International *Sanitary Conference* of the American Republics was held at the National Palace, City of Mexico, December 2nd to 7th, 1907. Reports were presented by delegates from Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Honduras, Mexico, Salvador, United States, Uruguay.

Resolutions adopted by the Third International Sanitary Conference,

This Third International Sanitary Conference adopted, among others, resolutions in effect (a) to request the representative of the Governments of Brazil, Colombia and Uruguay, in accordance with the full powers with which they were invested by their respective Governments, to approve and adhere to the Sanitary Convention of Washington of 1905 ; (b) to recommend to the Governments of the American Republics represented at this convention the codification of all the sanitary measures and laws of their respective countries and to send copies of such codification to the International Sanitary Bureau at Washington ; (c) to authorise the International Sanitary Bureau at Washington to establish relation with the International Sanitary Bureau at Paris ; (d) to carry out the resolutions of the Third International Convention of American States, held at Rio de Janeiro, August 1906 ; (e) to recommend to the American Governments the advisability of agreeing upon compulsory vaccination against smallpox ; (f) to recommend to the American Governments certain provisions for the purpose of preventing the spread of tuberculosis in railroad cars and steamers ; (g) to recommend the advisability of suggesting that European nations adopt the Sanitary Convention of Washington of 1905 with respect to such colonies as they may have in America and especially with regard to matters relating to yellow fever ; (h) that the adoption of measures intended to obtain the sanitation of the cities and especially of the ports, recommended by the Third International Conference of American States, at Rio de Janeiro, be made the subject of consideration by the members of the International Sanitary Convention of American Republics, to be held in Costa Rica, and that the International Sanitary Bureau at Washington be authorised to make investigations and to take such action as might be necessary to present these measures in a satisfactory form at the Convention in Costa Rica.

The Fourth International Sanitary Conference.

The Fourth International Sanitary Conference of the American Republic was held at San Jose, Costa Rica, December 25th, 1909, to January 3rd, 1910. Delegates were present from Colombia, Costa Rica, Cuba, Chile, El Salvador, United States of America, the Mexican United

States, the United States of Venezuela, Guatemala, Honduras, Nicaragua, and Panama. Committees appointed at the San Jose Convention on sanitation of ports and cities, malaria, and yellow fever, measures for protection of passengers, and on sanitary documents, reported.

Resolution of the Fourth Conference.

Thirteen resolutions were adopted by the Fourth International Conference. Among other things, this Conference recommended to the various governments that they employ all possible means at their disposal to secure effective sanitation of sea ports, to the end that the introduction of plague, cholera and yellow fever might be prevented and, in the event that a case of any of these diseases reached a port that it be promptly isolated and measures taken to prevent its spread. It also recommended ordinances for the proper construction of rat-proof buildings, the use of galvanised iron garbage cans, properly equipped laboratories at all sea ports for the periodical examination of rats, and a crusade against mosquitoes. It recommended that careful statistics on population, morbidity, and mortality be kept in each port, such data to be compiled at regular intervals of not more than one month. It recommended appropriate measures for use by masters of vessels to rid their vessels of rats. It recommended that no person be allowed to embark who is suffering from a quarantinable disease, or who is suffering from scarlet fever, diphtheria or any other communicable disease. It set down rules for permitting the embarkation of passengers and crew presumably exposed to infection. It recommended that the Fifth International Convention determine what should constitute immunity from yellow fever. It recommended to the governments represented the importance of disseminating information as to the best measures by which the people may protect themselves against malaria and tuberculosis. It recommended that the countries adopt the models of sanitary documents presented by the Committee and requested the Bureau of Information, at Montevideo, to forward to the International Sanitary Bureau, at Washington, all its transactions since the Third International Sanitary Conference. It resolved to request the Governments of the American Republics that they favour the establishment at sea ports and important cities of laboratories where not only diagnosis may be made to comply with requirements contained in the resolutions of the Sanitary Convention, but where also investigations in tropical medicine and general pathology could be made along lines which the sanitary authorities deem practicable.

The Fifth International Sanitary Conference.

The Fifth International Sanitary Conference of the American Republics was held at Santiago de Chile, November 5th to 11th, 1911. Delegates were present from the Argentine Republic, Bolivia, Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, United States of America, Guatemala, Honduras, Mexico, Panama, Paraguay, Salvador, Uruguay, Venezuela, and Chile. Reports were received from the committees on bubonic plague, malaria, yellow fever, cholera, sanitation of coast and frontier towns, prophylaxis of acute transmissible diseases, and prophylaxis of chronic transmissible diseases.

Resolution of the Fifth International Conference.

This Fifth International Conference passed twenty-six resolutions. Among these, it resolved that each nation should transmit regularly to the Central Committee at Montevideo, and to the International Sanitary Bureau, at Washington, all documents and reports relating to sanitation in that country, these documents to include demographic conditions in the chief ports and cities and the data relating to all kinds of contagious diseases. The Conference also recommended that the International Sanitary Bureau at Washington, should study the resolutions, and include in the programme of the Sixth International Sanitary Conference such amendments to the Washington Convention as it might deem necessary, and submit the proposed amendments. It resolved also that nations wherein leprosy exists be asked to keep accurate and detailed statistics of lepers, to organise colonies for the isolation of the patients and to enact laws to control this disease. Also it recommended that prostitution should be regulated in cities and especially in sea ports, entrusting the sanitary inspection to physicians especially prepared on the subject, discharging their duties in dispensaries or polyclinics provided with all necessary facilities, and that persons actively infectious be confined in hospitals until cured. It recommended that the governments establish in their respective countries a permanent commission on tuberculosis; that the Pan-American Union at Washington should through the diplomatic representatives of the various countries, request of those governments the organisation of such a commission; that the nations adhering to the Convention at Washington amend their rules of hygiene reports and on frontiers so as to agree with the terms of the convention. It further recommended that upon arrival of a vessel a bulletin should be posted advising the passengers on board as to the sanitary rules to which they are subject and as to the laws or regulations by virtue of which such rules are enforced; that each government adhering to the sanitary conference give special attention to those seaports and cities where the presence of endemic and infectious diseases shows clearly that the health of the world be improved by the introduction in such places of modern hygienic and sanitary water supplies and drainage. The Conference also resolved to renew the recommendations made by the Third International Conference of Mexico of 1907, to the effect that laws be adopted enforcing vaccination and revaccination against smallpox.

The Sixth International Sanitary Conference.

The Sixth International Sanitary Conference was held at Montevideo, Uruguay, December 12th-20th, 1920, Dr. Ernesto Fernandez Espiro of Uruguay, presiding. The following countries were represented : Argentina, Bolivia, Brazil, Colombia, Cuba, Chile, El Salvador, United States of America, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Venezuela, Uruguay.

Reorganisation of International Sanitary Bureau.

By vote of the conference, the International Sanitary Bureau was reorganised as follows :

“ The Bureau shall be composed of seven members consisting of a Director, a Vice-Director, and a Secretary, to be named by the Sixth International Sanitary Conference and thereafter by each successive Conference. Each International Sanitary Conference shall elect an Honorary Director of the International Sanitary Bureau, who shall be selected from among the heads or chiefs of the departments of hygiene or public health of the American Republics. In the intervals between the conferences, vacancies occurring in the personnel of the International Sanitary Bureau shall be filled at once by a vote of the majority of the remaining members.

“ The powers of the International Sanitary Bureau shall be in accordance with the principles approved by the First and Second International Sanitary Conferences.

“ The Bureau shall publish in English and Spanish a monthly bulletin which shall be called the Monthly Sanitary Reports of the International Sanitary Bureau (*Informes Mensuales de Sanidad Panamericana de la Oficina Sanitaria Internacional*).

“ An appropriation of \$20,000 was voted for the use of the Bureau, the funds to be prorated in the same manner as the funds which support the Pan-American Union.

“ The International Sanitary Bureau is authorised to make regulations for its administration which shall become immediately effective, but which shall be submitted to the Seventh International Conference for approval.

“ The members of the International Sanitary Conference who live at a distance from Washington may be represented, in case it is not possible for them to attend its meetings, by their respective diplomatic agents or by other persons who may be designated by the corresponding government.”

Resolutions adopted at the Sixth International Sanitary Conference.

Among the resolutions adopted by the Sixth International Sanitary Conference may be mentioned the following :

A resolution recommending the study and dissemination of information concerning personal hygiene in the treatment of tuberculosis.

A resolution recommending the collection of adequate statistics concerning pulmonary tuberculosis, bronchitis, pneumonia and whooping cough in tropical American countries having elevated habitable plateaus or table lands.

A resolution recommending preventive measures for gonorrhea as well as syphilis in those countries where syphilis alone is comprehended.

A resolution recommending that the modes of transmission of communicable diseases taught in the public schools, together with the elements of hygiene and prophylaxis.

A resolution recommending that the importation and sale of remedies which are regarded, by competent authority as specifics in the treatment of syphilis, be without tax.

A resolution recommending intensive campaigns against venereal diseases, combining treatment, prophylaxis, and popular education, instituting free dispensaries, and providing special resources to carry out this work.

A resolution recommending the centralization in the International Sanitary Bureau of all available information concerning the extent, the morbidity and mortality from malaria, its different clinical forms, its epidemiology and prophylaxis.

A resolution recommending that the programme of the Seventh International Sanitary Conference include the following subjects :

- (a) Uniform measures in accordance with suggestions from the International Sanitary Bureau in the investigation and control of malaria.
- (b) As a theme for study : Malaria in America and its extermination.

Typhus fever was made a notifiable disease in accordance with Article I of the International Sanitary Conference of 1905.

It was voted to recommend to the Governments of the American Republics the compilation and establishment of a sanitary code with specific provisions relating to measures for the control of transmissible diseases.

Annex 11.

C. H. 79.

SECOND ORIENTAL RED CROSS CONFERENCE TO BE HELD AT MANILA.

Letter from the Director of the League of Red Cross Societies to the Secretary-General.

Paris, March 24th, 1923.

SIR,

I have the honour to refer to the 9th Resolution adopted by the Oriental Red Cross Conference at its meeting in Bangkok in December last, under the terms of which the League Secretariat was requested to arrange for the *Second Oriental Red Cross Conference to meet in Manila, at the beginning of 1924.*

I have recently received from the Philippines Chapter of the American Red Cross the formal notification that it would be glad to extend hospitality to this Conference, together with a note from General Leonard Wood, Governor-General of the Philippines, associating the Philippine Government with this invitation. The Philippines Chapter of the American Red Cross has also kindly offered to act as a clearing-house for correspondence in connection with the preparation of this Conference, an offer which I have hastened to accept in view of the great saving of time which can thereby be effected.

I, accordingly, have the honour to request that you would be good enough to communicate in duplicate to the Philippines Chapter of the American Red Cross at Manila, and to the League Secretariat in Paris, your reply to the following questions :

(1) Copies of the present letter are being addressed to all the Red Cross Societies and other organisations which were represented at the Bangkok Conference. Will your Society be willing to send delegates to the Manila Conference ?

(2) Are there any organisations not represented at Bangkok to whom you would suggest that an invitation should be addressed for the Manila Conference ?

(3) It was suggested at Bangkok that this Conference should take place in January 1924. Would the dates January 23rd to 28th appear to you suitable for the meeting of this Conference ?

(4) It is suggested that the Agenda of the Manila Conference should cover the same questions as were discussed in Bangkok, last December. Are there any additional questions which you would desire to see added to the Agenda? It is proposed that delegates should be asked to furnish to the Conference such reports as they may think desirable and useful.

(a) Could you state upon what points your delegates would be prepared to contemplate furnishing reports ?

(b) Are there any particular points upon which you would like to see reports furnished by other delegations ?

(5) It would be a convenience to the Philippines Chapter, which is kindly undertaking the local arrangements for this Conference, to be advised in advance of the number of your delegates, their names, and the date at which they would contemplate reaching Manila.

I have the honour to be, Sir,

Your obedient Servant,
(Signed) CLAUDE H. HILL.
Director-General.

Annex 12.

C. H. 91.

MEMORANDUM ON THE PRELIMINARY WORK OF THE SPECIAL SERVICE OF EPIDEMIOLOGICAL INTELLIGENCE AND PUBLIC HEALTH STATISTICS.

In a memorandum dated Nov. 1922, the Medical Director referred to the principles of the work, which had been defined by the Health Committee at its last meeting, and presented plans for beginning the development of this Service. To this memorandum was attached an annex outlining certain preliminary steps which appeared to me to be desirable.

At the Medical Director's suggestion, the present memorandum covers in some detail the various aspects of the work so far undertaken, and contains some suggestions for the immediate development of the Service along the lines already laid down.

General Considerations.

Before reporting on the work in detail, it seems pertinent to submit certain general observations for the consideration of the Committee. These observations are based on

conferences with statistical and medical officers in several ministries of health, on a consideration of the broad principles that are involved, and upon the experience of conditions so far as I have had the opportunity to see them. I wish to put forward these suggestions quite frankly in the expectation that they, and the various aspects of the work undertaken and so far planned, will be as frankly discussed.

(1) I should like to suggest as a fundamental proposition that in no sense of the word should the Special Service of Epidemiological Intelligence and Public Health Statistics be developed along the lines of a "super" statistical organisation, but that rather it should be a clearing-house of epidemiological information and a co-ordinating agency for the co-operative development of epidemiological and medical statistics and information for international use. In other words, the Service should not attempt to direct the activities of any of the countries, but should seek to obtain and develop the co-operation of their technical epidemiological and statistical offices. This proposition, it seems to me, is not only sound in principle, but is essential from the point of view of practical necessity.

(2) It seems to me important to realise at the outset that the development of the service must be gradual, and that progress along some of the lines laid down must be slow. I consider that we are not setting out to do a task that can be finished within a specified time, but that we are engaged in building up a permanent agency, which is intended to function in the future as well as for the present. The Committee are doubtless fully aware that the project of an international service of this kind is no small undertaking. Its prosecution involves an intimate acquaintance with a great variety of technical details, must deal with a wide diversity of conditions, and is dependent upon agreement of marked differences of opinions and practices. Certain objectives that have been announced may be accomplished within a comparatively short period, and, obviously, there are certain activities that the Service can carry on without delay. Others, however, will necessitate the collection of a great deal of accurate information, which must be subjected to searching analysis, and the principal functions of the Service must undergo a process of carefully nurtured growth. With these considerations in mind, I have refrained from submitting, in the short time at my disposal, an extended programme, and have merely suggested an outline of what seem to me to be essential points at the beginning of the work, leaving the details and the further development of a programme to be worked out in the light of experience and with the help of those best qualified to advise.

(3) A distinction exists and should, I think, be recognised between two general activities of the service. One is the prompt exchange of current epidemiological intelligence and of information relating to sanitary organisation, legislation and public health activities. The other is the collection and utilisation of medical statistical records in the study, for example, of the world distribution of a specific disease, or on the comparative study of its epidemiology, or on the periodicity of epidemics. The first is a function which should be expanded as rapidly as possible, and which, I believe, can be developed in the near future with profit to the various ministries of health. The second is a series of research studies which must be done in a thoroughly scientific manner if the results are to be worth while. The collection and analysis of the material in studies of such far reaching importance will require not only time, but also the assistance of the best technical and practical medical statisticians and health officers. These studies, I would suggest, should not be undertaken independently by a technical staff at Geneva, but in a co-operative way by epidemiological and statistical offices in the various countries, assisted to some extent by the Service and co-ordinated in so far as is practicable for the purpose of securing results of international value.

Conferences with Epidemiological and Statistical Officers.

Through the courtesy of the ministries of health, I have had the opportunity, as the Medical Director has pointed out, of conferring with the heads of the statistical and epidemiological offices in seven European countries. These conferences were held in London, Bern, Brussels, Prague, Vienna, Warsaw and Budapest. In every instance, free access was allowed to the officers and technicians engaged in statistical and epidemiological work, and permission was granted to maintain direct touch with them on all technical questions. I wish to express my great appreciation of the willing co-operation given by everyone I had the pleasure of meeting.

Four main aspects were dealt with at these conferences :

(1) The types of epidemiological reports in the several countries and practical methods of securing prompt and full exchange of all official epidemiological and statistical information ;

(2) Ways and means of rendering the Service of greater value to ministries of health ;

(3) Practical methods of studying the various systems of epidemiological and public health statistics and health organisations ;

(4) Methods of securing closer relationship between the Service and the technical statisticians and epidemiologists in the various countries.

I feel that, from the point of view of the Service, at least, and especially as regards myself, these preliminary conferences have been of great value, and would suggest that they be extended to other countries, firstly in Europe, and later in South America and in the East.

Unfortunately, as the Medical Director has indicated, it was impossible to hold a conference in Italy before the meeting of the Health Committee, but arrangements have been made to hold it in the near future. I hope that similar conferences may be possible during 1923, either for myself or for members of the Epidemiological Intelligence Service staff, at Bucharest, Sofia, in the Scandinavian countries, in Spain, in Portugal, and possibly in some of the South American countries.

Lines of Work already Undertaken and Suggested.

With the approval of the Medical Director, work has been done during the three and a half months since February 1st, 1923, along the following specific lines :

- (1) Organisation of a staff and the development of certain lines of work already begun within the Health Section at Geneva ;
- (2) Initiation of a series of studies on the notification, collection, tabulation and utilization of reports of notifiable diseases in different countries ;
- (3) Collection of information on the health organisation, the various special activities in disease prevention, facilities for relief, sanitary legislation and regulation, etc. ;
- (4) Collection of official epidemiological intelligence from countries already co-operating and from certain countries from which reports had hitherto not been received ;
- (5) Initiation of the collection and critical examination of the medical statistics of the various countries.

The following paragraphs give some details of this work and contain certain specific suggestions for the consideration of the Committee.

1. Technical and Clerical Staff.

In order to bring and keep up to date the work of compiling and abstracting epidemiological reports received at Geneva, and to extend this work in certain directions, the clerical staff is being increased. It is planned to employ during the present year several additional temporary clerks for the purpose of organising the files and taking care of accumulated work. This work is temporarily under the immediate supervision of an assistant statistician, Miss D. Wiehl.

It soon became evident that in addition to the technical and clerical staff at Geneva, it was necessary to secure the services of two qualified persons for the purpose of keeping in personal touch with the statistical and epidemiological offices, and of prosecuting various phases of the studies of methods of disease notification and reports. Accordingly, Mr. T. J. Dattield, formerly instructor in vital statistics in the Harvard University, and Municipal Health Officer in the United States, who previously had made studies on vital statistics in European countries for the International Health Board, and Dr. Norman Lothian, formerly an officer in the Royal Army Medical Corps of Great Britain, with a considerable experience in public health work, have been appointed in this capacity, and began their duties during May.

2. Current Reports of Notifiable Diseases and other Epidemiological Intelligence.

(a) Collection and Compilation.

In the past, the epidemiological intelligence work of the Health Section has been concentrated on the Central and Eastern European countries, and a series of reports have been issued in the form of Epidemiological Intelligence (Nos. 1 to 6) and of Epidemiological Reports (Nos. 1 to 50). During the same period, arrangements were made for receiving the currently published official reports of notifiable diseases and medical statistics from most of the European countries and elsewhere. The statistical intelligence regarding most notifiable diseases had been collected, but was not being utilised for the current interchange of epidemiological intelligence except for Eastern and Central Europe, although, in the last two numbers of Epidemiological Intelligence, summaries for certain diseases were published for all European countries for which data were available.

In the development of this phase of the work, the following steps have been taken :

(1) The records compiled for 1922 were checked against the original sources for purposes of accuracy, and some further compilations were made. The statistical returns were brought up to date, and are now being compiled as soon as they are received.

(2) Arrangements were made to obtain the official reports of notifiable diseases from European countries from which current information had hitherto not been received, and current reports are now being received from every European country except Albania, Portugal, Spain and France. With respect to France, reports are being received from certain cities, and will also be received from Spain. Current reports are received from other countries as follows :

(a) Arrangements are being made by which it is hoped to obtain such reports as are available from the British Dominions and Colonies through the British Ministry of Health ;

(b) From the Dutch Colonies through the Netherlands Colonial Office.

(c) From the Far East. Among the subjects for enquiry by the Chief Epidemic Commissioner, Dr. Norman White, during his mission to the Far East, is that of epidemiological intelligence. On his return, and upon the arrival of the new Japanese member of section, it is expected that active steps may be taken towards obtaining such epidemiological reports as are available from the Far Eastern countries and territories not among the Colonial possessions.

At the present time no direct reports are being received from the South American countries. I earnestly hope that steps in that direction may be taken without further delay, even at the cost of sending a member of the staff to at least some of the South American countries during the present year.

(3) Attention has already been given to lessening the serious delays which occur in collecting, tabulating, and forwarding the reports from many countries. While under existing conditions it is probably impossible to avoid some delay, it has been found possible in certain countries, after conference with the statistical and epidemiological officers, to shorten materially the time between notifications and their receipt at Geneva, without any modification of existing regulations or laws. At the risk of giving too many details, I may say that in one country it was proposed that duplicate reports should be received by the Ministry of Health direct from district medical officers instead of through the provincial officers, thereby shortening the delay by a fortnight. In another instance, the reports were forwarded direct from the Ministry of Health to the Health Section, instead of through the representative at Bern. In other instances the Ministries of Health kindly offered to furnish the Health Section with written copies of the statistical reports before publication, thus saving several weeks' time. Through the co-operation of Surgeon-General Cumming, the United States Public Health Service is sending by registered mail its statistical reports in proof form so that the data are received in Geneva at about the same time as it is printed in Washington. Dr. Cumming has agreed, when it is deemed advisable by the Health Section, to cable a weekly summary of his reports of notifiable diseases in the United States, and has suggested an ingenious code whereby the cost of the cable to the Health Section will be approximately 500 francs annually.

In the case of countries outside Europe, no considerable shortening of time in transmission can be effected except by substituting cable or wireless for mails. It is too early yet to decide upon this question, and I would rather delay making any recommendation until further information has been obtained as to the character of the reports available from extra-European countries.

(4) Since much of the epidemiological intelligence received is non-statistical, it has seemed advisable to compile and post the non-statistical as well as the statistical data. Accordingly, during the last few weeks, the work of extracting non-statistical data from official reports and medical and epidemiological periodicals, which had been temporarily stopped on account of the lack of sufficient staff, has been resumed.

In general, the plan of posting the information, as it is received, is to enter it in chronological order on a separate sheet for each disease in each country or sub-division, so that the latest information, in full detail, may be seen at a glance.

(b) Utilisation of Reports.

How should the information collected be used ?

It would seem that one of the principal purposes of an international epidemiological intelligence service is to effect a prompt interchange of information of the occurrence of diseases, particularly epidemic diseases. Admittedly, reports are incomplete and in some cases seriously inaccurate. At the same time, they are all we have, and all we shall have until they can be gradually improved. That they are of value is attested by the fact that compilations of a somewhat international character are already published by the public health services in such countries as Switzerland, England and the United States.

Following along the line of the valuable series of publications which have already been issued, especially on the notifiable diseases in Central and Eastern Europe and to some extent in other European countries, the preparation of a summary of the official reports of notifiable diseases in European countries during 1922 was undertaken. I hope that this work will be sufficiently advanced to permit proof copies of, at least, part of the summary to be placed before the Committee for their consideration and suggestions. Also the contents of the Epidemiological Reports have been gradually enlarged to contain the current official reports of notifiable diseases of the various countries as they are received, extending the geographical scope of the summaries to include not only Europe, but also the United States and other countries, as arrangements for obtaining their official reports can be effected. Later, when the reports can be transmitted with greater promptness and can be obtained from a larger number of countries, a more systematic and regular publication can be made.

(3) *Study of the Notification of Disease, etc.*

In order to study the simplest and most reliable methods of obtaining information regarding the incidence of disease and the progress of epidemics, it was considered best to secure in the first place a brief report of the vital and public health statistics in each country. The

suggested outline for this report has been placed before the Committee by the Medical Director, and he has already discussed the matter in his report. The preparation of these preliminary reports is at present confined to the following continental European countries :

Albania.	Greece.	Portugal.
Austria.	Hungary.	Serb-Croat-Slovene
Belgium.	Italy.	Kingdom.
Bulgaria.	Netherlands.	Spain.
Czechoslovakia.	Norway.	Sweden.
Denmark.	Poland.	Switzerland.
Finland.		

These reports are being prepared by the statistical or epidemiological technicians in the various countries, and in some cases by members of the staff of the Health Section and the Epidemic Commission in co-operation with the Ministries of Health concerned.

These reports are intended to furnish only the preliminary data for immediate information and the basis for more detailed and extended study later, either by technicians attached to the statistical and health offices in the different countries or by members of the Epidemiological Service staff. An alternative method would have been to concentrate on one or two countries at a time, but by arranging for a series of simultaneous reports in a number of countries, it was believed that a broader knowledge of the existing systems of disease notification, and epidemiological intelligence in the different countries would be obtained, not only for the immediate purposes of developing the exchange of epidemiological information, but also as the basis for outlining a more intensive study of public health statistics. I hope similar information can be secured from other countries on the same plan, with any improvements suggested by experience.

(4) Survey of the Health Organisation, etc. of Different Countries.

It was considered that the Health Section and public health officers should be in possession of a systematic collection of information on the health organisation in each country. The preparation of a preliminary report of this subject was undertaken at the same time, and in conjunction with the preliminary report on public health statistics. The two reports are being prepared in some countries by the same person ; in others by several members of the staffs of Ministries of Health, or by members of the Health Section staff in co-operation with the Ministries of Health. The outline for this report has already been presented to the Committee by the Medical Director.

(5) Medical Statistics.

A broad distinction should be drawn between epidemiological reports and other intelligence for current purposes, and medical statistics for scientific use in epidemiological analyses and researches. Certainly, in their present stage of inaccuracy and incompleteness, the currency reports of notifiable diseases and of epidemic conditions cannot be used for the latter purpose except to a very limited extent, and they cannot yet be regarded, in the scientific sense of the term, as medical statistics. For the present, at least, mortality registration, in conjunction with the registration of births, the enumeration of population under the various categories and conditions, etc., must be regarded as the principal source of medical statistics for epidemiological study.

The difference between countries in the method of registering deaths and births, in diagnosing diseases causing death, in classifying these causes, etc., are so great and the variations in accuracy and completeness so wide, that no scientific use of the statistics can be made without a thorough understanding of these differences and shortcomings. It seems to me essential that a careful study should be made of the medical statistics in each country by competent medical statisticians. Some material relating to the procedure and methods of mortality and birth registration and of population enumeration will be afforded in the preliminary reports on public health statistics ; but the study of medical statistics will take considerable time and will need the best judgment of qualified statistical experts.

I have discussed this phase of the work with Dr. Greenwood of the British Ministry of Health and the Medical Research Council, and certain details with statistical officers in Czechoslovakia, Austria and the United States. Dr. Greenwood has generously agreed to supervise and assist in the study of the medical statistics of at least two European countries, the first of which has already been completed. During the coming summer it is hoped that the first of a series of informal conferences of medical statisticians with the technical staff of the Service may be held.

Annex 13.

C. H. 94.

THE CHOICE OF EFFECTIVE AND ECONOMIC METHODS OF COMBATING MALARIA ACCORDING TO THE CIRCUMSTANCES OF THE COUNTRY CONCERNED AND THE PARTICULAR EPIDEMIOLOGICAL CONSIDERATIONS INVOLVED.

Note by Sir George Buchanan to the President of the Health Committee.

London, May 20th, 1923.

Sir,

May I beg your leave to invite the Health Committee to add the consideration of the annexed Note to the Agenda of our forthcoming Session? Colonel James raises a question of considerable practical importance in view of the present dissemination and local increase in malaria. The matter is one which, in my view, is particularly relevant to the work of international health organisations which exist for the mutual aid of different nations in questions of practical epidemiology. It is also, in present circumstances, a problem of some urgency. With the limited time at our disposal, and with a short notice to the Committee, I feel that it may not be possible to do more at this Session than give approval to the principle of Colonel James' suggestions, but, if such approval can be given, it may be possible to make progress in the matter before our next Session. I hope, therefore, that you will permit the circulation of this Note forthwith to members of the Health Committee, and that you will spare time for a brief discussion of the question which it raises.

I have the honour to be, Sir,

Your obedient Servant.

(Signed) G. S. BUCHANAN.

Letter dated May 17th, 1923, from Dr. James, Medical Officer to the British Ministry of Health, to Sir George Buchanan.

Sir,

I have the honour to address you in your capacity as Vice-Chairman of the Committee of the Health Section of the League of Nations with the suggestion that at the forthcoming Meeting on May 26th, the Committee should be moved to take such steps as may seem to them proper and desirable with the object of ensuring adequate consideration:

- (a) Of the present situation as regards malaria in Europe;
- (b) Of the means of malaria prevention which it would be practicable to adopt, having in view the economic and social conditions concerned, and the desirability of ascertaining and defining how a limited amount of money can be most effectively applied in different circumstances.

I beg to attach a short memorandum on the subject of this suggestion.

I have the honour to be, Sir,

Your obedient Servant,

(Signed) S. P. JAMES, M.D.,
Medical Officer and Adviser on Malaria
to the British Ministry of Health.

NOTE SUGGESTING A LINE OF ACTION RELATIVE TO MALARIA.

(1) During and since the war, malaria increased greatly in some of its endemic centres in Europe, and in 1921 and 1922 it spread widely from those centres to certain areas, particularly in Russia, Albania, Bulgaria, the Kingdom of the Serbs, Croats, and Slovenes and Greece, which formerly were relatively free from it. Such details on this subject as are available are published from time to time in the Epidemiological Reports of the Health Section of the League, and it is not necessary for me to cite them here.

(2) For the purposes of amelioration and prevention on economical and effective lines, it is necessary in the first place to obtain precise information of the actual distribution and character of the disease in those countries. This information is required in order that it may be possible to appraise the magnitude of the task, and to say in what areas measures are advisable, in what areas they are essential, and in what areas they are both essential and urgent. The knowledge as to incidence, type, fatality, etc., which we possess at present is quite insufficient for that purpose. Therefore, the first need seems to be to make arrangements for defining accurately the distribution and relative severity of the diseases in different parts of each affected country.

(3) Having ascertained these facts, it will be necessary next to study the epidemiological circumstances and conditions responsible for the spread of the disease in the different countries affected. It must not be assumed, I think, that these circumstances and conditions will be similar in each country, or that they will be the same as those commonly observed in malarious countries of the tropics. Knowledge of the etiology of malaria is fairly extensive, but knowledge of its epidemiology is still very incomplete. Undoubtedly, the epidemiological situation as regards malaria in Europe is new, and the first essential is that it should be investigated thoroughly in all its aspects. There is good reason to believe that such investigations would show that some of the preventive methods commonly recommended on tropical experience would not be the most effective and economical methods for application to affected countries in Europe. The probability that this is true was indicated during the war, firstly, by the acknowledged failure of some preventive methods based on tropical experience, which were thoroughly tried, under military direction and regardless of expense, in certain areas of Greece; secondly, by the observation that in England, France and some other countries of Western Europe, which suffered from considerable outbreaks of locally-contracted malaria during the war, the disease disappeared as a result of other measures and circumstances than those which tropical experience would indicate as being necessary to that end.

(4) Having regard also to the primary consideration that in all probability only a small amount of money will be available for preventive methods, it will not be practicable to employ several preventive methods at the same time; instead, it will be more profitable to ascertain by careful investigation which of various known methods is likely to be the most effective in the particular circumstance, and to concentrate all available effort upon that method. In this connection, some of the new observations recently made in France, Denmark, Holland, England etc., relative to the disappearance of malaria from those countries and the failure of the disease to spread in them under the apparently favourable circumstances resulting from the war, seem to suggest the hope of finding a link in the epidemiological chain, which possibly might be cut through somewhat easily and with little expenditure of labour, money and material.

(5) Another subject needing thorough enquiry, particularly from the point of view of economy, is the distribution of quinine. When quinine has to be distributed on a great scale, very careful enquiry is necessary regarding the needs of different localities and regarding the special agencies which must be established for the work. In many places, no quinine may be necessary at all; in others, it may be required for only a short time in certain years; in others it is required every year but only at a certain season; in yet others there is need for its continuous use.

(6) Local Commissions have been established in some of the affected countries for studying the malaria problem, and for taking such action as may be possible in the new circumstances that have arisen. Reports on the post-war spread of malaria and in some cases on its subsequent disappearance have been made for several regions, some of these reports having been published by Government Public Health departments, or communicated to the Office international d'hygiène publique. What seems to be most necessary now is the creation of a central co-ordinating expert agency, which will make available to local organisations and administrations the experience and assistance, which malariologists in other parts of Europe and of the world generally can give, and will arrange to take up systematically the study of various administrative and scientific problems, which must be solved before the most effective and economical method of preventing malaria in the one or another set of circumstances can be indicated. I suggest that the League of Nations, through its Health Section, should appoint a Scientific Committee of expert malariologists to act as the central agency. The local Malaria Commission or specialised Malaria administration in each affected country could then delegate one of its members to attend meetings of the Central Committee, which would be held periodically. The Central Committee would depute to individual members, or to particular scientific workers appointed *ad hoc*, the investigation of problems selected at these combined meetings. Relations of mutual confidence would exist between the central agency and the local commissions, and there would be free interchange of views not only on the occasions of the periodical meetings, but by means of correspondence at all times. Given the aid of the Health organisation of the League of Nations and its Epidemiological Branch, the use of its machinery for collection and distribution of reports, arrangements for meetings, and financial support for particular investigations, the suggestion which I have outlined would be made practicable and should, I think, produce invaluable results.

Ministry of Health, May 20th, 1923.

(Signed) S. P. JAMES.

Annex 14.

C. H. 84.

[REPORT ON THE WORK OF THE EPIDEMIC COMMISSION SINCE JANUARY 1923.

The members of the Health Committee will remember from the Report presented at the last Session by Sir George Buchanan that the Epidemic Commission have had this year three centres of activity : in Poland, in Russia, and in Greece.

With regard to the continuation of the *work of the Commission in Poland*, the Committee are aware that in January a balance of £10,500 was still owing to the Polish Government for the completion of the programme of the construction of hospitals and other sanitary institutions. The execution of this programme was rendered possible by a grant of £50,000 made by the French Government in April 1922, and ear-marked for the purpose. Since your last Session, further disbursements have been made leaving some £3,000 still unspent under this heading. It is anticipated that our activities in Poland will come to an end in three or four months, and I think the Committee will agree that it would be best to await the return of the Chief Epidemic Commissioner before the final liquidation of this part of the work of the Epidemic Commission.

The Polish Public Health Service, which has now almost completed the organisation of its defensive sanitary zone in the eastern provinces of Poland, has expressed its deep regret at the impending withdrawal of the Epidemic Commission. The Committee will find in Appendix 1 a full statement as to the expenditure, which is being incurred by the Polish Government for the maintenance of the sanitary defences in their eastern provinces. These very detailed estimates give a clear idea of the considerable sacrifices, which continue to be made by the Polish Public Health Service. After your last Session, I received a communication (Appendix 2) from the Polish Minister of Public Health, and he may, perhaps, desire to supplement his declaration at the forthcoming session.

In Russia Dr. Pantaleoni has continued to act in liaison with the Public Health Authorities ; in Moscow and Kharkov he has assisted the authorities in the organisation of the sanitary courses referred to in the report on the general activities of the Health Section. Through him we have been receiving a large amount of information on epidemiology and public health, and I should like to record here the appreciation, which is due to the Central Health Authorities for the promptness with which they have placed information at his disposal. They have also given him assistance in his journey to the Eastern Ukraine and the Caucasus for the purposes of a local enquiry concerning the prevalence of malaria.

In Greece the Epidemic Commission has been engaged in very intensive work. The Committee may remember that the services of Dr. Gauthier and Dr. Haigh were placed, at the request of the Greek Government, at the disposal of the Ministry of Health at Athens. Dr. Haigh is acting as technical adviser to that Ministry and he has been engaged during the last four months in the very strenuous work of medical inspection of the various groups of refugees on the Greek islands and in certain places on the mainland. His untiring efforts have resulted in many places in the immediate improvement of the situation, and I believe the Greek Authorities fully appreciate the value of the work, which is being continued under conditions of great personal risk.

Dr. Gauthier has been entrusted with the direction of an extensive vaccination campaign undertaken amongst the refugees on Greek soil. The Greek Ministry of Public Health set up early in January a Vaccination Committee of which Dr. Gauthier became the Secretary-General. The whole of the Greek territory is divided into two areas with centres at Athens and Salonica. Dr. Gauthier remained at the capital in charge of the whole campaign. Thanks to his energy and perseverance, he was able to surmount the many obstacles presented by this campaign, which had been undertaken at an urgent summons, on a very large scale but with very limited means, and he has organised the vast enterprise which is at present working in Greece.

The work at Salonica was placed in the hands of Dr. Wroczynski, who has been temporarily engaged as an Assistant Epidemic Commissioner. His name may not be unknown to the members of the Health Committee, who have followed closely the campaign against typhus in Eastern Europe. He was responsible for the conduct of the anti-epidemic work over a vast area of the eastern provinces in Poland. He spent the last twelve months in the United States and in the western countries of Europe in a close study of the methods of public health administration.

The vaccination campaign is being conducted on behalf of the Greek Vaccination Committee. Experience has shown that a special organisation was necessary to carry out the work rapidly and successfully, and that it was difficult to rely on the help either of medical officers in charge of the various refugee camps, or of the local public health officials. Our Epidemic Commissioner proceeded, therefore, to recruit on behalf of the Vaccination Committee medical officers, medical students, and sanitary inspectors, of whom more than 80 have been accepted and sent out in ten vaccination columns. These columns have been at work since January 26th, and have been distributed in the territory in the manner as detailed in the annexed note (Appendix 3).

The total number of vaccinations performed amounted on April 1st to 1,674,585, namely :

Tetra	{ 1st vaccination	635,739
	{ 2nd »	340,111
Smallpox	. . . . .	698,735

The successful carrying out of a campaign on such a considerable scale presented many difficulties. It must be realised that the vaccinations were carried out in centres of typhus and smallpox, and on many occasions the columns could not proceed to work before the refugee camps had undergone a thorough cleansing and disinfection. I very much regret to state that one of the leaders of the vaccination columns, Dr. G. Dimitriadis, contracted typhus, and died on the seventh day of the disease at the Piræus.

The Epidemic Commissioners receive detailed reports from the leaders of the columns as to the sanitary situation in their area, and the data so obtained have been published from time to time in our "Epidemiological Reports". I need not dwell on the very difficult situation caused by the continuous arrival of the refugees in Greece, but I may refer to it in order to emphasise the difficult task, which your representatives have undertaken in Greece. Action has sometimes been postponed through delays in the payment of salaries and travelling expenses of the vaccinators as well as by the, at times, not very hearty support given by the local authorities. The campaign being now in full swing, it is not possible to request the Commissioners to present a detailed report, but for the information of the Committee I have annexed a statement (Appendix 4) concerning the conditions in Greece. Unfortunately, there is no reason to believe that any notable improvement has occurred since that date. Although the incidence of typhus has considerably diminished with the coming warm season, there is great danger of an epidemic of dysentery, while malaria will undoubtedly very seriously affect the general sanitary situation of the refugees.

The Committee may remember that our work in Greece was rendered possible by a grant of £5,000 from the funds at the disposal of Dr. Nansen as High Commissioner of the League of Nations for refugees. This sum was spent on the purchases of sanitary material in accordance with the desires of the Greek Government and on the financing of the initial stages of the vaccination campaign in conformity with the budget, which was laid before the Health Committee in January last. As the credit of £5,000 became exhausted, it was necessary to continue the campaign out of the funds of the Epidemic Commission. In order that the liabilities might be clearly defined, it was stipulated that the campaign should end by May 15th, and the Commissioners are making every possible effort to complete the vaccination of the majority of the refugees, at least on the mainland, by that date. Every effort is being made to achieve this object, but it does not seem probable that more than 60% of the total number of the refugees will have been vaccinated by that date against smallpox, as well as against cholera and typhoid. The tetra vaccination is being used, but in most cases it was only possible to effect one single vaccination.

Should our assistance be withdrawn by the end of May, it is to be feared that no systematic vaccination campaign would be continued; moreover, refugees are still arriving in Greece from Constantinople and Asia Minor. The remainder of the refugees, therefore, would probably not be vaccinated with the tetra vaccine or against smallpox, and further no extensive anti-dysentery vaccination would be carried out. The Greek Ministry of Public Health, fully alive to this situation, has presented a request, both to the Epidemic Commissioners in Greece and direct to Geneva, for the continuation of the campaign. As the Committee will note from the annexed financial statement (Appendix 5), the funds of the Epidemic Commission are almost entirely exhausted. There remains unspent the sum of money which was promised to the Latvian Government for the establishment of a quarantine station, and negotiations are proceeding at the moment with a view to effecting economies, which might release a couple of thousand pounds for more urgent work. After very full enquiry, it was found possible to make available a sum of £2,000 for the continuation of the vaccination campaign.

It will now be possible to begin vaccination against dysentery and to continue the general vaccination, although with diminished personnel, during the whole of the summer. In fact, it is anticipated that the new funds will allow for operations to be continued until the end of September. Dr. Wroczynski will have, however, to return to his post in Poland, and Dr. Haigh will take charge of the Macedonian area.

At the beginning of April, the representative of the Nansen Commissariat at Constantinople sent a request asking that Dr. Haigh might go there for a fortnight or so in order to give technical advice in the organisation of a service for the delousing and disinfection of 30,000 Greek refugees, who had just arrived from Asia Minor, and who were in a state which constituted a danger to health.

The Greek authorities appear to be anxious to take advantage of the vaccination campaign against dysentery in order to test the reliability of the intestinal method of vaccination. The Director of the Public Health Services has addressed an official letter, which is annexed to this report (Appendix 6), and on its receipt I have communicated with Professor Calmette, and he has very kindly transmitted all necessary information concerning the preparation of the intestinal vaccine to Dr. Blanc of the Pasteur Institute of Athens. Neither the Health Committee, nor the Epidemic Commissioners are in any way responsible for the conduct of these experimental vaccinations, but they will assist the Greek authorities in recording the results of this test.

The work of the Commission in Greece had necessarily to be limited to the work, which it was possible to do with the meagre funds at our disposal. We have, I believe, conformed to the principles underlying the work of the Epidemic Commission. In fact, all the field operations were carried out by Greek personnel and on behalf of the Greek Ministry of Public Health; further, the work accomplished was essentially of a preventive nature, and, finally, all expert advice and technical assistance, which our Commissioners have given, was always formulated at the direct request of the Greek authorities. The main epidemic problem in Greece remains that of malaria, while the main public health problem is that of the establishment of an efficient public health service, particularly in the provinces. The solution of these

problems will require considerable time, and it is obvious that the Greek Government, unless it receives financial assistance, will be powerless to deal with the problem presented by the invasion of refugees, who now represent at least 20% of the entire population of Greece. The Greek Government have applied to the Council of the League of Nations for their assistance in raising a £10 million loan, which will be utilised for finding a permanent solution of the refugee problem. They are assisted in their efforts by Dr. Nansen, and the Committee will be glad to learn that at their last session in April 1923 the Council adopted the following resolution :

“ The Council, having heard Dr. Nansen’s statement as to the position of the refugee problem in Greece :

“ Understanding that the Greek Government is now engaged in collecting the essential information, which the Financial Committee require in order to examine, in accordance with the authorisation already given by the Council, the practicability of the flotation of a loan on the basis of securities which Greece could offer :

“ Now requests the High Commissariat, in consultation with the Greek Government, to consider whether, if a loan should prove practicable, it would be possible to replace the temporary relief measures that, except in a part of Western Thrace, have hitherto alone been undertaken by a general plan enabling refugees in other parts of Greece to be settled on the land, or otherwise established on a self-supporting basis, and, if so, to prepare a scheme for the purpose ;

“ And hereby appoints a Sub-Committee, consisting of the British, French and Italian Members of the Council, with authority to invite the Greek Government to add a fourth member, to receive the reports from the Financial Committee and from the High Commissariat, and advise the Council at its next meeting whether the League itself can properly and usefully accept any responsibility or take any action.”

Should these efforts be followed by material results, the Health Committee may yet be requested to offer their expert advice in finding a solution for the two main public health problems facing Greece at the present moment.

APPENDIX 1.

ESTIMATES OF THE COST OF MAINTENANCE OF SANITARY DEFENCE IN THE EASTERN DISTRICTS OF POLAND FOR A PERIOD OF ONE YEAR.

Epidemic Hospitals in Poland. — List of Epidemic Hospitals.

Kowel Administration.

District of Volhynia :	13 hospitals with .	... ..	685 beds.
» » Polesia :	2 » » .	... ..	105 »
Total :			790 beds.

Lwow Administration.

District of Tarnopol :	7 hospitals with .	... ..	490 beds.
Total :			490 beds.

Vilna Administration.

Vilna Area.

District of Vilna :	14 hospitals with .	... ..	1255 beds.
» » Novogrodek :	11 » » .	... ..	685 »
Total :			1940 beds.

Bialystok Administration.

District of Bialystok :	16 hospitals with .	... ..	820 beds.
» » Polesia :	9 » » .	... ..	610 »
Total :			1430 beds.

Hospital Accommodation under the Central Administration.

1. Zamość .	... ..	75 beds.
2. Bilgoraj .	... ..	50 »
3. Hrubieszow ...	... ..	50 »
4. Chelm ...	... ..	50 »
5. Wlodawa ...	... ..	50 »
6. Biala Podlaska ...	... ..	50 »
Total :		325 beds.

Epidemic Hospital Accommodation at Points d'Etape.

1. Baranowicze No. 1 and 2	...	...	...	...	...	...	...	300 beds.
2. Dorohusk	...	...	...	...	...	...	...	250 »
3. Równo	...	...	...	...	...	...	...	100 »
4. Bialystok No. 1, 2 and 3	...	...	...	...	...	...	...	300 »
Total :								950 beds.

Total hospital accommodation amounts to 5,915 beds, estimated in round figures at 6,000.

Cyanide Columns.

1. Baranowicze	...	...	...	...	...	...	...	...	1
2. Równo	...	...	...	...	...	...	...	...	1
3. Bialystok	...	...	...	...	...	...	...	...	1
4. Dorohusk	...	...	...	...	...	...	...	...	1
5. Tarnopol	...	...	...	...	...	...	...	...	1
Total :									5

Bacteriological Laboratories.

1. Baranowicze	...	...	...	...	...	...	...	...	1
2. Równo	...	...	...	...	...	...	...	...	1
3. Dorohusk	...	...	...	...	...	...	...	...	1
4. Vilna	...	...	...	...	...	...	...	...	1
5. Bialystok	...	...	...	...	...	...	...	...	1
6. Tarnopol	...	...	...	...	...	...	...	...	1
Total :									6

Bathing Trains.

1. Baranowicze	...	...	...	...	...	...	...	...	1
2. Równo	...	...	...	...	...	...	...	...	1
Total :									2
Sanitary train No 1	...	...	...	...	...	...	...	...	1

Bathing Establishments.

- 1st Category : 4.
 1. Baranowicze No. 1.
 2. » No. 2.
 3. Równo.
 4. Dorohusk.
 2nd Category : 2.
 3rd Category : 1.
 4th Category : 6.

Epidemic Hospitals.

The estimates are based on the cost of maintenance of a hospital unit containing 50 beds.
 The expenditure required is as follows :

Staff of the Epidemic Hospitals.

Grade					Monthly Salaries.	
					Pol. Mk.	Swiss Fr.
(1) Medical Superintendent	...	...	...	1	416,500	55.52
(2) Housekeeper	...	...	...	1	75,000	10.00
(3) Clerical Assistant	...	...	...	1	75,000	10.00
(4) Nurses	...	...	...	3	225,000	30.00
(5) Disinfector	...	...	...	1	60,000	8.00
					851,500	113.52
(6) House staff	...	...	...	9	365,000	48.66
Total :					1,216,500	162.18

Remunerations and Grants.

The amount estimated for this item is equal to $\frac{1}{2}$ per cent. of the salaries paid to the staff, that is to 6,082 Pol. Mks. or 0.81 Swiss Francs.

Rent.

The standard hospital unit of 50 beds consists of 15 rooms. The rent for each room is 3,000 Pol. Mks., *i.e.*, a rental of 45,000 Pol. Mks. or 6 Swiss Francs per hospital unit.

Heating and Lighting.

Quantity of coal required : 8 tons a month at 360,000 Pol. Mks., *i.e.*, 48 Swiss Francs a ton. On this basis fuel costs 2,880,000 Pol. Mks., *i.e.*, 384 Swiss Francs per month.

Quantity of petroleum required : 108 litres at 3,000 Pol. Mks., *i.e.*, 0.40 Swiss Francs a litre. Thus lighting costs 324,000 Pol. Mks., *i.e.*, 4,320 Swiss Francs per month. The total expense for heating and lighting is 3,204,000 Pol. Mks., *i.e.*, 427.20 Swiss Francs per month.

Cleaning.

The cost of cleaning per hospital : 70,000 Pol. Mks. or 9.33 Swiss Francs per month.

Repairs and Renewals to Building.

The amount estimated for this item is 100,000 Pol. Mks., *i.e.*, 13.33 Swiss Francs per month.

Repairs and Renewal to Equipment.

100,000 Pol. Mks., *i.e.*, 13.33 Swiss Francs per month.

Printing.

10,000 Pol. Mks., *i.e.*, 10.33 Swiss Francs per month.

Stationery Supplies.

10,000 Pol. Mks., *i.e.*, 1.33 Swiss Francs per month.

Telephone and Telegraph Charges.

12,000 Pol. Mks., *i.e.*, 1.60 Swiss Francs per month.

Travelling Expenses.

140,000 Pol. Mks., *i.e.*, 18.66 Swiss Francs per month.

Transport Services.

Motor Cars, Horses, etc., 500,000 Pol. Mks., *i.e.*, 66.66 Swiss Francs per month.

Indemnities.

Indemnities to members of the staff in case of invalidity or of death : the expense is estimated at 10% of the total amount of salaries of all grades. The sum required is 121,650 Pol. Mks., *i.e.*, 16.22 Swiss Francs.

Miscellaneous Petty Expenses.

15,000 Pol. Mks., *i.e.*, 2 Swiss Francs per month.

Food for Patients and Staff.

The maintenance in food of a patient is estimated at 4,000 Pol. Mks., *i.e.*, 0.53 Swiss Francs per day, that of the personnel of 5,000 Pol. Mks., *i.e.*, 0.66 Swiss Francs per day. Thus the cost of maintaining a hospital unit of 50 patients and 16 members of the staff is 8,400,000 Pol. Mks., *i.e.*, 1,120 Swiss Francs per month. Estimating the percentage of empty beds at 40 %, the amount required for this item is 6,000,000 Pol. Mks., *i.e.*, 800 Swiss Francs per month.

Drugs.

Provision of drugs is estimated at 300,000 Pol. Mks., *i.e.* 40 Swiss Francs per month.

Summarised Table.

The cost of a hospital unit of 50 beds will be as follows :

	Pol. Mks.	Swiss Francs.
Salaries	1,216,500	162.18
Remunerations	6,082	0.81
Rent	45,000	6.00
Heating and Lighting	3,204,000	427.20
Repairs and Cleaning	170,000	22.66
Equipment	100,000	13.33
Printing	10,000	1.33
Telegrams	12,000	1.60
Stationery Supplies... ..	10,000	1.33
Travelling Expenses	140,000	18.66
Transport Service	—	—
Indemnities	121,650	16.22
Petty Expenses	15,000	2.00
Food	6,000,000	800.00
Drugs	300,000	40.00
Total	11,850,232	1,579.98 ¹

The upkeep of 1 hospital bed must therefore be estimated at 237,000 Pol. Mks., *i. e.* 31.60 Swiss Francs per month and the cost of maintaining 6,000 beds would be 17,064,000,000 Pol. Mks., *i. e.* 2,275,200 Swiss Francs per year.

Upkeep of Cyanide Columns at Points d'Etape.

Staff of Columns.

Grade.		Rate		Total Monthly Salary.	
		Pol. Mks.	Swiss Francs.	Pol. Mks.	Swiss Francs.
(1) Leaders	5	150,000	20.00	750,000	100.00
(2) Disinfectors	5	82,500	11.00	412,500	55.00
(3) Sanitary Personnel	5	55,000	7.34	275,000	36.68
(4) Workmen	5	55,000	7.34	275,000	36.68
Total per month				1,712,000	228.36

Disinfectants.

The cost of disinfectants is estimated at 225,000,000 Pol. Mks., *i. e.* 30,000 Swiss Francs per year. Yearly salary of all grades : 20,550,000 Pol. Mks., *i. e.* 2,740.32 Swiss Francs. Thus the cost of upkeep of 5 Cyanide Columns will amount to :

Salaries ...	2,740 Swiss Francs.
Disinfectants	30,000 Swiss Francs.
Total ...	32,740 Swiss Francs per year.

Bacteriological Laboratories.

Grades.		Monthly Salaries.	
		Pol. Mks.	Swiss Francs.
(1) Bacteriologist in charge	1	527,000	70.26
(2) Assistant*	1	416,500	55.54
(3) Laboratory Attendant	1	82,500	11.00
Total		1,026,000	146.80

The cost of upkeep of six Bacteriological Laboratories will be 73,872,000 Pol. Mks., *i. e.*, 9,849.60 Swiss Francs.

Bathing and Disinfecting Trains.

(Daily attendance from 200 to 500 persons.)

Staff.

Grades.		Monthly Salaries.	
		Pol. Mks.	Swiss Francs.
(1) Inspector	1	90,000	12.00
(2) Clerical Assistant	1	82,500	11.00
(3) Disinfectors	1	70,000	9.34
(4) Sanitary Staff	1	55,000	7.34
(5) Engineer	1	70,000	9.34
(6) Workmen	2	90,000	12.00
Total		457,500	61.02

Total of salaries of staff of all grades for 2 trains would be : 10,980,000 Pol. Mks., *i. e.*, 1,464.40 Swiss Francs per annum.

¹ Grand totals are given in round figures.

Soap.

The quantity of soap required is 30 gr. per each person daily. Estimating the number of persons bathed at 1,000 daily and the cost of soap at 7,000 Pol Mks., i.e., 0.94 Swiss Francs per kg. the total expenditure estimated for this item will be 756,000,000 Pol. Mks., i.e. 100,800 Swiss Francs per annum.

Thus giving a total cost of upkeep of 2 bathing and disinfecting trains as follows :

		Pol. Mks.	Swiss Francs.
Salaries	... ..	10,980,000	1,464.40
Soap	... ..	756,000,000	100,800.00
Total	... ..	766,980,000	102,264.40

Sanitary Train No. 1.

Staff.

Grades.		Pol. Mks.	Monthly Salaries. Swiss Francs.
(1) Commandant of Train	... .. 1	606,650	80.89
(2) Manager	... .. 1	167,000	22.27
(3) Housekeeper	... .. 1	90,000	12.00
(4) Nurses	... .. 3	270,000	36.00
(5) Disinfector	... .. 1	185,000	16.66
(6) Subordinate staff	... .. 25	1,167,500	155.66
Total	... ..	2,426,150	323.48

This gives a total cost of 29,113,800 Pol. Mks., i.e. 3,882 Swiss Francs per annum.

Bathing Establishments.

1st Category.

Staff.

Grades.		Pol. Mks.	Monthly Salaries. Swiss Francs.
(1) Manager	... .. 1	472,500	63.00
(2) Inspector	... .. 1	125,000	16.67
(3) Clerical Asst.	... .. 1	100,000	13.34
(4) Disinfector	... .. 1	82,000	10.94
Total	... ..	779,500	103.95
(5) Subordinate Staff	... .. 10	535,000	71.34
Total	... ..	1,314,500	175.29

Total for salaries of staff for a period of one year, for 4 Bathing Establishments : 63,096,000 Pol. Mks., i.e., 8,414.92 Swiss Francs.

2nd Category.

Staff.

Grades.		Pol. Mks.	Monthly Salaries. Swiss Francs.
(1) Inspector	... .. 1	112,500	15.00
(2) Clerical Asst.	... .. 1	90,000	12.00
(3) Disinfector	... .. 1	75,000	10.00
Total	... ..	277,500	37.00
(4) Subordinate Staff	... .. 7	383,500	51.14
Total	... ..	661,000	88.14

This gives a total for salaries amounting to 15,264,000 Pol. Mks., i.e., 2,115.60 Swiss Francs for two Bathing Establishments per annum.

3rd Category.

Staff.

Grades.		Pol. Mks.	Monthly Salaries. Swiss Francs.
(1) Inspector	... .. 1	90,000	12.00
(2) Clerical Asst.	... .. 1	82,500	11.00
(3) Disinfector	... .. 1	70,000	9.34
Total	... ..	242,500	32.34
(4) Subordinate Staff	... .. 4	215,000	28.66
Total	... ..	457,500	61.00

Total for salaries of this Bathing Establishment is 5,490,000 Pol. Mks., i.e., 732 Swiss Francs per annum.

4th Category.

											Staff.			
Grades.											Monthly Salaries.			
											Pol.	Mks.	Swiss Francs.	
(1)	Nurse	...	...	...	...	...	...	...	...	1	75,000	10.00	
(2)	Disinfector	...	...	...	...	...	...	...	...	1	67,500	9.00	
Total											142,500	19.00
(3)	Subordinate Staff	...	...	...	...	...	...	...	...	3	133,000	17.74	
Total											275,000	36.74

Total for salaries of staff for six Bathing Establishments for a period of one year is : 19,836,000 Pol. Mks. i.e., 2,645.00 Swiss Francs.

Salaries of the Staff of Bathing Establishments of all Categories.

						Category.	Pol. Mks.	Swiss Francs.
Bathing Establishment	...	...	...	...	...	1	63,096,000	8,413.92
»	»	...	...	...	...	2	15,864,000	2,115.60
»	»	...	...	...	...	3	5,490,000	732.00
»	»	...	...	...	...	4	19,836,000	2,645.00
Total							104,286,000	13,906.52

Daily Attendance at Bathing Establishments.

						Category.	Number of persons.	
Bathing Establishment	...	...	...	...	...	1	From 1,000	to 2,000
»	»	...	...	...	...	2	From 500	to 1,000
»	»	...	...	...	...	3	From 200	to 500
»	»	...	...	...	...	4	From	200

The quantity of soap required is estimated on the basis of daily attendance as follows :

						Category.	No. of Persons.
Bathing Establishment	...	...	...	...	...	1	6,000
»	»	...	...	...	...	2	1,500
»	»	...	...	...	...	3	300
»	»	...	...	...	...	4	200
Total							8,000

The provision of soap is estimated at 30 gms. for each person daily. Thus the daily expenditure of soap will be 240 kgs. for 8,000 persons. The cost of the soap being about 7,000 Pol. Mks. i.e., 0.94 Swiss Francs, the total amount of soap required for a period of one year will be 604,800,000 Pol. Mks. i.e., 85,440 Swiss Francs.

The quantity of coal is estimated at 12.5 cubic metres for every thousand persons bathed. This gives for a total of 8,000 persons bathed daily 100 cubic metres of coal. The annual expenditure of coal will amount to 3,600 tons. A ton of coal costs 360,000 Pol. Mks., i.e., 48 Swiss Francs. On this basis the cost of 3,600 tons will be 1,296,000,000 Pol. Mks. i.e., 172,800 Swiss Francs.

This gives a total cost of upkeep of Bathing Establishments as follows :

										Pol. Mks.	Swiss Francs.
(1)	Salaries	...	...	...	...	...	...	...	...	104,286,000	13,904.80
(2)	Soap	...	...	...	...	...	...	...	...	640,800,000	85,440.00
(3)	Coal	...	...	...	...	...	...	...	...	1,296,000,000	172,800.00
Total										2,041,086,000	272,144.80

General Statement of the Expenditure required for the Maintenance of Health Defence in the Eastern Districts of Poland for a Period of one Year.

										Pol. Mks.	Swiss Francs.
(1)	Upkeep of Hospitals	...	...	...	...	...	...	...	...	17,064,000,000	2,275,200.00
(2)	Columns	...	...	...	...	...	...	...	...	245,550,000	32,740.00
(3)	Bacteriological Laboratories	...	...	...	...	...	...	...	...	73,872,000	9,849.60
(4)	Bathing Trains	...	...	...	...	...	...	...	...	766,980,000	102,264.00
(5)	Sanitary Train	...	...	...	...	...	...	...	...	29,113,800	3,882.00
(6)	Bathing Establishments	...	...	...	...	...	...	...	...	2,041,086,000	272,144.80
Giving a grand total of										20,220,601,800	2,696,080.40

APPENDIX 2.

LETTER FROM THE POLISH MINISTER OF HEALTH TO THE DIRECTOR OF THE HEALTH SECTION.

[Translation.]

Geneva, January 16th, 1923.

Sir,

I have the honour to reply as follows to your letter of January 15th, 1923 :

According to information received by the Polish Government, the official communications from the Health Section and the explanations given to the Health Committee at its last session by the People's Commissary for Public Health of the Soviet Republic, the health situation in Russia and the Ukraine remains extremely serious and still threatens the western neighbours of these Powers, and indeed the rest of Europe.

It has unfortunately not been found possible to carry out the whole of the programme for the creation of a sanitary zone in eastern Europe which had been drawn up by the Warsaw European Health Conference and the carrying out of which was entrusted to the Epidemic Commission of the Health Section.

I consider that the carrying out of this programme affords the greatest possible guarantee for the safety of the national health of the peoples of Europe, and am convinced that the Epidemic Commission of the League of Nations alone can carry out this work successfully. I therefore foresee great danger in any premature winding-up of that Commission, and would beg you, Sir, to make every effort to prolong the Commission's existence and to enable its work in eastern Europe to be continued, at least until such time as the minimum programme decided upon by the Warsaw Conference has been carried out.

I take this opportunity of expressing the Polish Government's high appreciation of the work accomplished with incomparable zeal and devotion by the Epidemic Commission, and have the honour to be Sir,

(Signed) CHODZKO.

Polish Minister for Public Health.

APPENDIX 3.

NOTE ON THE TERRITORIAL DISTRIBUTION OF VACCINATION CORPS IN GREECE.

The Epidemic Commission has recruited over 80 vaccinators (doctors, medical students and nurses). They have been divided into ten Corps. These are often subdivided into groups of two or three, in order to meet all requirements as speedily as possible. The table below shows how the Corps or parts of Corps are distributed throughout the districts in which the vaccination campaign is being carried out, from January 26th to March 31st.

Names,	Towns and other Refugee Centres.		
Old Greece. (Continental)	<i>Attica and Boeotia</i>	Athens, the Piræus and 11 other centres	Corps I
	<i>Phtiotis and Phocis</i>	Lamia and 5 other centres	» I
	<i>Aetolia and Acharnania</i>	Missolonghi and 13 other centres	» VI
	<i>Euboea</i>	6 refugee centres	» III
	<i>Larissa</i>	Larissa, Volo and 2 other centres	» IV
	<i>Trikkala</i>	Trikkala	» III and IV
	<i>Yanina</i>	Yanina and Philippias	» VI
	<i>Prevesa</i>	Prevesa	» VI
	<i>Arta</i>	Arta	» VI
	<i>Corfu</i>	Island of Corfu and Island of Loucada	» V
	<i>Cephalonia</i>	4 centres in the Island of Cephalonia	» V and VI
	<i>Achaia and Elis</i>	Patras and 2 other centres	» IX
	<i>Messenia</i>	Calamata	» II
	<i>Arcadia</i>	Tripoli	» III
Peloponnesus	<i>Argolis and Corinth</i>	Corinth and 12 other centres	» I and II
	<i>Laconia</i>	Gythion and Sparta	» II
	<i>Crete</i>	Canea and 3 other centres	» IV
	<i>Cyclades</i>	Syra	» I
Island of Crete Cyclades	<i>Samos</i>	Refugee centres in the Island	» III
	<i>Mitylene</i>	2 centres	» III
	<i>Chios</i>	Chios	» IV
	<i>Salonika</i>	Salonika and various other centres	» VII and VIII
Macedonia	<i>Drama</i>	Cavalla, Thasos and other centres	» IX
	<i>Euros</i>	Dedeagatch and other centres	» X
Thrace	<i>Rhodope</i>	Gumuljina and other centres	» X

APPENDIX 4.

STATEMENT ON THE EPIDEMIOLOGICAL SITUATION IN GREECE BASED ON THE CORRESPONDENCE OF THE REPRESENTATIVES OF THE EPIDEMIC COMMISSION. (First Journey of Investigation, October 1922 to April 1923.)

I. *Causes of the Epidemics in Greece.*

In September 1922, owing to the advance of the Turkish armies, the number of Asia Minor Greeks coming back to Greece assumed considerable proportions.

According to a note from an official Greek source, the number of refugees from Asia Minor amounted to 198,000 at the end of September 1922, and was increasing every day¹.

Greece, who was exhausted by a long period of wars, and had given asylum for ten years to refugees from the Caucasus, Crimea and Armenia, was not equipped for giving living accommodation to a further and considerable influx of population, nor was she in a position to supply them with the necessaries of life.

The convoys appear at first to have been free from cases of epidemic disease, but a large proportion of the refugees were in a state of dirt and misery; certain of the convoys had undertaken forced marches before embarking, and arrived in a very weakened condition; they were generally crowded into any buildings available — which were almost always unhealthy — or into camps with no sanitary installations; and they could not, as a rule, be sufficiently fed. It will be realised that these conditions favoured the outbreak and spread of epidemic diseases.

II. — *Western Thrace and Macedonia.*

(Extracts from a Report by Dr. Wroczyński on the situation on February 15th.)

Number of Refugees.

“Thrace and Macedonia are the two provinces in which the immigrant population is the densest. In Western and Central Macedonia there are 194,010 refugees, and in Eastern Macedonia and Western Thrace there are 213,246, *i.e.*, a total of 407,256, while the local population numbers only 1,301,353 inhabitants.”

Exact data can, however, only be obtained with regard to refugees who are in receipt of assistance from the Public Relief Authorities and the American Red Cross or other philanthropic organisations. Out of the 407,256 refugees, the number of those who receive assistance from the Public Relief authorities is 334,888. We have added to this number 70,000 refugees who are self-supporting, and who are at present at Salonica.

The number of refugees in other parts of Thrace and Macedonia is not known.

Distribution.

Since December 15th, the distribution of the refugees has been changed considerably. During the retreat the refugees kept to the railway lines or to the main roads in Thrace. The stream was arrested in the towns and in thickly populated districts.

When the Government succeeded in organising the refugees in a rough and ready way a tendency to leave the towns gradually made itself felt. The town of Salonica, for example, was able to send 33,000 refugees into the agricultural districts; 17,117 refugees coming from the prefectural district of Drama and 12,918 from that of Serres were established in country districts.

In spite of this tendency, however, the dominant fact at the present time is the concentration of refugees in the towns and in the neighbourhood of the towns. Out of the total of 405,000 more than 260,000, *i.e.*, 65 % of the total, are still in towns of more than 5,000 inhabitants.

Character of the Immigrant Population.

The refugees from Eastern Thrace belong almost entirely to the agricultural population. Those who come from Asia Minor include a large number of small farmers, workmen (carpet weavers, etc.) and traders. The fact that the refugees are concentrated in the towns places the farming class at a great disadvantage, since it is difficult to find an occupation for them in thickly populated localities.

In certain districts the situation is especially serious for example, in the town of Cavalla and the prefectural district of Cavalla, which are inhabited by tobacco growers, tobacco growing being almost the only industry. The villages in that district are sheltering a large number of refugees. Corn and other food-stuffs are extremely scarce, and will probably be completely exhausted by March. The danger is very great from an economic, food, and health point of view. In Cavalla, which is a town of 25,000 inhabitants, there are 18,000 refugees. They are living in the tobacco warehouses where the over-crowding is very serious. In addition to this, the

¹ At the beginning of April 1923, the Greek Government estimated the number of Asia Minor refugees in Greece at about 1,130,000, and of that number 855,225 were in receipt of State assistance on March 17th.

town does not possess sufficient water for its needs. The scarcity of water is so great that in summer the inhabitants are forced to wait for hours in front of the wells. All the towns in Macedonia and Thrace are in a similar situation. The difference is only one of degree.

To sum up, it is essential, alike from a health and from an economic and administrative point of view, to relieve the congestion in the towns by sending the whole of the agricultural population into the country districts.

Living Accommodation and Health Conditions of the Refugees.

In the villages the arrival of the refugees has caused much over-crowding, and the sanitary conditions of the dwellings have suffered greatly in consequence. The refugees are lodged in peasants' houses, where they generally occupy one or two rooms. They are, therefore, in very close contact with the population. They receive practically no medical attention. It is impossible to enforce the most elementary rules of hygiene. The position is just as bad in the towns; indeed, it is sometimes much more dangerous, as the over-crowding is very serious. The refugees occupy churches, mosques and synagogues, schools, and every possible public or private building.

In certain districts the refugees are in camps. These camps consist of hospital barracks built by the Allies during the great war, or erected specially for the refugees. In the large camps outside the towns, such as those near Salonica, it is easier to enforce measures of hygiene.

The municipalities and the Government itself have begun to build houses to lodge these refugees, but the percentage of refugees in barracks specially constructed for them in Macedonia and Thrace is insignificant. In short, the problem of housing the refugees is one of great difficulty. More than 90 % of the refugees are still living in provisional quarters, many of which are public buildings which should be evacuated as speedily as possible.

Feeding of the Refugees.

The assistance given by the Greek Government, the American Red Cross and other philanthropic associations is restricted in the great majority of cases to the supply of bread. (The case of agricultural families to which a certain quantity of corn is supplied constitutes an exception.)

The daily ration of bread distributed in the towns does not exceed 300-400 gr. per person. Condensed milk is only supplied to aged persons.

The distribution of foodstuffs by the American Red Cross is confined almost entirely to the large towns. The small provincial towns receive scarcely anything. We give below the American Red Cross rations.

(Lembet Camp at Salonica, containing 6,000 refugees.)

(1) Ordinary Ration.

- 400 gr. of bread per person per day.
- 45 gr. of peas once a week.
- 45 gr. of rice once a week.
- 45 gr. of haricot beans twice a week.

(2) Supplementary ration, for children, convalescents and aged persons :

- 45 gr. of meal three times a week.

(3) Supplementary ration, for women who are pregnant or who are suckling children, and for infants :

- 250-500 gr. of milk per day.

Mortality among the Refugees.

Statistical data are obtainable at Salonica for the months of August, September, October, November and December 1922, and January 1923.

The number of refugees at Salonica is 160,000. The number of deaths recorded was 1,545 in five months (September, October, November, December and January), which gives a mortality rate of 9.6 % per thousand.

There are at Salonica 64,000 refugees from Eastern Thrace and 96,000 from Asia Minor. We have been able to establish the mortality figures for each of these two groups of refugees. The proportion of deaths per thousand refugees is 6.2 for the refugees from Thrace and 12.2 per thousand for the refugees from Asia Minor. It is very remarkable to note that the mortality among the refugees from Asia Minor is about double that of the refugees from Thrace.

The following table gives the number of deaths at Salonica under the main disease headings, and the proportion of deaths per 100,000 refugees :

Disease	Sept.	Oct.	Nov.	Dec.	Jan.	TOTAL	Proportion per 100,000 of pop.
Dysentery	21	48	50	20	16	155	96.9
Pulmonary tuberculosis ...	14	34	35	30	40	153	95.6
Pneumonia and broncho- pneumonia	12	36	69	81	125	323	201.9
Infantile diarrhoea (chil- dren under 2 yrs. of age)	14	64	50	16	11	155	96.9
Malaria	13	54	44	17	11	139	86.9
Gastro-enteritis (persons of all ages)	6	17	24	23	19	89	55.6
Smallpox	0	1	2	1	0	4	2.5
Debility and senility ...	8	15	55	19	23	120	75
Scarlatina	1	7	5	5	3	21	13.1
Measles	0	1	0	1	10	12	7.5
Typhoid fever	4	5	7	3	4	23	14.4
Typhus	0	0	1	1	2	4	2.5
Diphtheria	1	3	2	1	2	9	5.6
Other diseases	26	75	96	68	73	338	—
Total	120	360	440	286	339	1545	96

The infant mortality is heavy. The following table gives the mortality figures for children under two years of age :

Number of Deaths.

	Sept.	Oct.	Nov.	Dec.	Jan.	TOTAL	Proportion per 100,000 of pop.
From all causes among children under two years	34	117	108	45	89	393	26
From pneumonia and broncho-pneumonia ...	4	18	27	20	58	127	79
From diarrhoea	14	64	50	16	21	155	133

The mortality among children coming from Asia Minor is six times higher than among those coming from Thrace.

These figures lead to the following observations and conclusions :

(1) The total *mortality*, which amounts to 9.6 per thousand for the five months, is not high, thanks to the absence of serious infectious diseases. We do not know the average mortality rates in Macedonia and Western Thrace at the season of the year corresponding to these five months.

It would, however, appear that the mortality among the native Salonica population is less than half as high.

(2) The greatest number of deaths are due to non-epidemic diseases.

(3) The large number of deaths from broncho-pulmonary diseases is due to bad lodgings and overcrowding of refugees.

(4) The much higher mortality among refugees from Asia Minor than among those from Thrace is due to the fact that it was possible to evacuate the latter westwards on a more or less ordered system, whereas the former had to flee in haste and they arrived in a destitute and weakened condition.

(5) The great majority among aged persons is an indication of the unsatisfactory condition of existence of the refugees.

Infectious Diseases.

Typhus. Macedonia and Thrace are well acquainted with typhus, as serious epidemics occurred in that country in 1917, 1918 and 1920. Epidemics broke out at Salonica in 1918 among refugees during the great war. At the camp of Kalamaria there were more than 100 cases of typhus a day during that period, and an epidemic centre of typhus infection seems to have existed at Cavalla.

In September 1922, when the refugees were beginning to invade Greece, there was no typhus in Macedonia or in Thrace. The first cases were recorded in October among the refugees who came from Pontus (at Kilkis near Salonica, at Florina and at Pravi near Cavalla). At Salonica itself the first case occurred on December 5th. In December and January, other centres of infection appeared in Macedonia and Thrace.

Up to the February 15th, 204 cases and 14 deaths had been recorded, the great majority of which occurred at Cavalla, 103 cases ; Salonica 81 cases.

The main centre of infection at Cavalla is disappearing.

At Salonica the position remains unchanged.

Thanks to the help and intervention of the military doctors, who have more considerable means at their disposal than the civil authorities, the danger of typhus in Macedonia and Western Thrace has greatly diminished, and it may be hoped that it will soon be definitely removed.

Smallpox. There were 23 cases of this disease in December and January 1923. Vaccination has been carried out almost everywhere, but in the absence of registers it is impossible to state how many of the refugees have been vaccinated. For example, at the Harmankeui camp (Salonica), where 80% of the refugees were recorded as vaccinated, the re-vaccination showed that 85% had actually been vaccinated.

Typhoid fever is endemic throughout Macedonia and Thrace.

In the hospitals which I visited I found cases, but, as their disease had not been reported to the Public Health Service, we only have figures of deaths.

Twenty-three deaths from typhoid and paratyphoid fever occurred in Salonica alone in a period of five months.

Dysentery. The Public Health authorities do not possess any information with regard to the number of cases or the exact nature of this disease. The enquiry which was undertaken showed that there had been an epidemic of dysentery at Dedeagatch in the month of November. The number of sick persons exceeded 200. The mortality was heavy.

The tables showing the mortality at Salonica give a fairly large number of cases classified as dysentery in October and November 1922. An epidemic of dysentery is likely to occur during the hot season.

Malaria is so prevalent in the country that it may be considered the greatest danger at the moment.

The diminished power of resistance of the immigrant population makes a spread of this disease probable this summer. Preparations should be made immediately to combat it.

Medical Assistance and Hospital Accommodation.

Hospital accommodation is extremely limited. The province is almost entirely unprovided in this respect.

The figures are as follows :

Western Thrace	128 beds
Eastern Macedonia	142 beds
Central and Western Macedonia	1,230 beds
Total	1,500 beds,

1,160 of which are Salonica.

Necessity of Preventive Vaccination for Refugees.

An examination of the situation proves the necessity from every point of view of carrying out a general vaccination of all refugees against smallpox as well as against intestinal diseases. The work to be accomplished is enormous.

III. — *Thessaly and Lamia in Phthiotide.*

Thessaly (438,408 inhabitants) has at present 23,000 necessitous refugees.

At *Volo*, the principal port, there were in November 30,000 refugees as against 40,000 inhabitants. The water supply is both good and sufficient. The health position was satisfactory at the end of November, but there was an outbreak of smallpox in January and February (90 cases and 13 deaths); vaccination has been made compulsory and the epidemic has ceased. Typhus occurred about the same time and cases are still reported.

Larissa (approximately 25,000 inhabitants), the chief town of Thessaly, was giving asylum to 3,500 refugees at the end of November. Typhoid fever and malaria are endemic in Thessaly. In January cases of *typhus* and *smallpox* occurred; the number increased in February, smallpox ended in March but 70 cases of typhus and relapsing fever have been found since January among the refugees, and 35 among the local population. These diseases had not been exterminated at beginning of April.

At *Trikala* (where there were 3,900 refugees in November), the *smallpox* and *typhus* centre has also rapidly extinguished.

At *Lamia* (approximately 9,000 inhabitants), in Phthiotide, a case of typhus appeared immediately after the arrival of a convoy of 1,400 refugees, and, as no sanitary precautions were taken, there were 70 cases shortly afterwards, and before the incipient epidemic could be stopped by systematic delousing, there were 110 cases at the hospital alone. There were also 20 cases of *relapsing fever*.

IV.—*Western Coast and the Ionian Islands.*

The first convoys disembarked at the end of November only, as these regions had been reserved for the refugees coming from Pontus ; there was then a rapid succession of arrivals, and almost all vessels carried persons sick with *typhus* and *smallpox*. The refugees disembarked in a wretched and verminous condition, and there were often more of them than there were inhabitants in the locality (or island). They had to be crowded into any available buildings, without it being possible in most cases to take any sanitary precautions ; epidemic diseases, therefore, spread rapidly and infected the local population. The hospitals which had previously been in existence or which were then improvised were crowded to overflowing. Many deaths occurred, and this fact caused a panic ; some of the refugees were brought in haste from the coast to the interior of the country, where they created new centres of disease.

Finally, in many places, the refugees could only be insufficiently fed.

It was quite impossible to draw up any statistics in view of the general disorganisation which prevailed.

The Island of Corfu, Janina, Arta, Prevezza and the Islands of Leucade and Zante appear to have been the most seriously affected.

At the present time, thanks to the bathing, delousing and vaccination, to which all the refugees in these centres are subjected, the epidemics have, generally speaking, been arrested, but certain centres of disease, such as that at Corfu, are not extinct. There are 11,000 refugees in that island.

It should, however, be noted that, in spite of the insufficiency of the measures adopted, the state of health of the refugees has improved, even as compared with the beginning of February. At Corfu, in the middle of January the daily death rate of refugees was about 20, many of which were certainly due to typhus, whereas at the end of February only 80 cases of typhus existed.

V.—*The Peloponnesus.*

There are 55,800 necessitous refugees in the Peloponnesus. This region is one of those in which *typhus* and *smallpox* have made the most serious ravages.

At *Patras* (42,000 inhabitants), 25,000 refugees had been disembarked by the end of January. The last convoy contained sick who had come from a concentration camp, all covered with lice and fainting from inanition. After the arrival of this convoy, 40 cases of *smallpox* were reported and there were soon eleven cases of *typhoid fever* and four of *typhus*¹.

At *Tripolis*, a very serious epidemic broke out among the 1,325 refugees who arrived in January from Pontus ; there were about 300 cases of typhus on February 15th. During the first 25 days of this epidemic the average number of deaths was 8 per day ; towards the middle of February there were still 3 or 4 deaths a day ; after that the number of cases and deaths decreased. A letter dated April 2nd reported that the situation was improving.

At *Calamata*, a town in the Southern Peloponnesus, where 7,000 refugees from Constantinople had been landed, there were at the end of January no cases of typhus or enteric fever, and at that time only 2 cases of *smallpox* were reported. Among the local population, however, an epidemic of influenza, frequently followed by *encephalitis lethargica*, raged in December 1922 and January 1923 ; about 100 cases of *encephalitis* were reported in the province of *Calamata*. There were only five cases in March.

VI.—*Athens and the Piræus.*

At the end of November, Athens, a town of 317,000 inhabitants, was giving shelter to 83,000 refugees ; in the Piræus (135,000 inhabitants), there were at that date 35,000 refugees and 50,000 in February.

As early as the end of September 1922, a notice from official Hellenic sources reported that *typhus* had appeared at Athens and in the Piræus. As regards *smallpox*, which is endemic in the Piræus, there were on November 29th, 45 cases among the refugees, in addition to several cases in the town ; at that time there were only two cases of typhus in the district. Two months later, in Athens and the Piræus, there were 300 cases of typhus in hospitals and about 200 cases of *smallpox*. 733 cases of typhus and 103 of *smallpox* have been notified in March. Piræus remains the worst centre for both diseases. *Smallpox*. Notifications (about 80 per month) are almost entirely from the stationary population, whereas typhus exists also among the refugees. 570 cases were reported for March.

The vaccination has been made compulsory for the civil population in the Piræus. Generally speaking, these cases of typhus and *smallpox* were mild or only moderately severe ; the rate of mortality in the Piræus may be said to have hardly changed at all since the outbreak of these epidemics. Before January there were from 300 to 350 deaths per month among a population of 135,000 inhabitants ; in January, the number of deaths was 450 among a population of 185,000 inhabitants.

¹ Patras is still the most dangerous centre of disease (together with Athens and the Piræus), and there were still 44 cases of typhus there during the second half of March. Compulsory vaccination has been introduced for the inhabitants, and *smallpox* has now greatly diminished.

VII. — *Islands in the Ægean and Crete.*

The number of refugees in proportion to the population is larger in the islands of the Ægean than in all the rest of Greece except Thrace and Eastern Macedonia ; it amounts to 45.7 % at Mitylene ; 47.1 % at Samos, and to 53 % at Chios.

Small outbreaks of smallpox have been reported from Crete, Chios and Euboea.

* * *

It is unnecessary to emphasise the fact that the information which has been received is incomplete, and that it will be difficult to reconstitute retrospectively statistics of morbidity and mortality in Greece during the past few months ; the Greek Government only established a Health Ministry in January 1923, and before that no regularly organised health administration existed anywhere in the country. Even now the only data which are more or less accurate are those concerning Athens and the Piræus.

Where they are inexact, however, the figures which are recorded are invariably underestimated.

It is, however, clear that typhus and smallpox have, since the autumn, been the most widespread and dangerous of the serious epidemic diseases.

In spite of the violence of certain outbreaks of epidemics (such as that of typhus at Corfu and at Tripolis), and the delay—often considerable—in adopting defensive measures against typhus, and although typhus and smallpox have spread all over the country, these diseases have not attained the development which was feared ¹.

As regards typhus, this fact would appear to be due more to climatic conditions than to the adoption of prophylactic measures (except in the case of Macedonia and Thrace) ; as regards smallpox, the vaccination campaign, which has been in progress since the end of January has, no doubt, removed the danger (see Note page 2).

For the moment, dysentery and malaria constitute the most serious menace in Greece, and our Commissioners believe that, unless energetic action is taken by all the organisations in the country, these diseases may in a short time seriously extend their ravages and become epidemic.

APPENDIX 5.

EPIDEMIC COMMISSION.

Assets and Commitments as on April 18th.

<i>Commitments.</i>										£
Poland	...	...	...	...	...	...	...	...	...	4,100
Russia	...	...	...	...	...	...	...	...	...	1,000
Latvia	...	...	...	...	...	...	...	...	...	9,920
Greece	...	...	...	...	...	...	...	...	...	420
Sundries :										
Salaries : three Commissioners and Mr. Watson up to Dec. 31										2,480
Warsaw Office expenditure										250
										£18,170
<i>Assets.</i>										
Cash : Lloyds Bank, London										10,580
» » Geneva										3,810
Warsaw £3,500 + 1,360										4,860
Polish Mks. and sundries (say)										100
Credits Recoverable :										
Interest Bank debit London										250
Salaries two Commissioners to May 15th										250
Salary two months Dr. Gauthier										170
Sundry										50
										£20,070
Less : Held on behalf of Health Section and Research Fund										600
										£19,470
<i>Estimated surplus</i>										1,300
Balance of the 50,000 Swiss frs. allocated by the Health										
Section (salaries up to Dec. 31st, deducted)										500
										£1,800

¹ Our Commissioners estimate at about 4,000 the number of cases of typhus (excluding these which occurred among soldiers) for the 11 weeks which elapsed between January 13th (January 1st according to the Greek calendar) and March 1st among the total population of Greece, which amounts to 6,000,000 (local population and refugees), while the number of cases of smallpox is estimated by them at 900.

Three quarantine stations exist at present in Greece : (1) St. George, on an island near the Piræus, (2) one on the island of Macronisos, facing the southern extremity of Attica and (3) one at Salonica.

St. George's is controlled directly by the Greek Health authorities ; improvements in the installation which could be effected at a very slight cost would enable it to carry on its work much more effectively.

The station of Macronisos, with regard to which we are less well informed, is very well installed as regards material requirements, but the island is inaccessible when the sea is rough—with the result that the water supply is interrupted.

APPENDIX 6.

[Translation.]

Athens, February 2nd, 1923.

Professor CHRISTOMANOS, Director-General of Health Services
at the Ministry of Health, Relief and Social Welfare,
To Dr. GAUTHIER, Epidemic Commissioner of the League of Nations in
Greece.

Dear Dr. Gauthier,

You were good enough to communicate with me, pointing out the great advantage of making experiments — in certain refugee camps, where endemic dysentery is now raging — with various anti-dysentery vaccines, and to propose that these vaccines should be prepared either by the Pasteur Institute in Paris or by the Pasteur Institute in Athens, in conformity with precise directions which would be furnished by Professor Calmette.

I myself am of opinion that — in view of the great and pressing danger of the spread of dysentery in Greece and on account of the over-population and the bad hygienic conditions prevailing in nearly all centres — it is of capital importance that both the refugee and the Hellenic population should be able to acquire the probable immunity which would be conferred by vaccines, whether they are administered by subcutaneous inoculation or *per os*.

Consequently, the Minister for Health is prepared to authorise the employment of this method in Greece under your supervision, and under the conditions which would be most favourable to a carefully controlled series of experiments.

I have the honour to be, etc.

(Signed) Dr. A. CHRISTOMANOS.

Annex 15.

C. 391. 1923. II.
(C. H. 110.)

SCHEME FOR THE PERMANENT HEALTH ORGANISATION OF THE
LEAGUE OF NATIONS.

Drafted by the Special Mixed Committee consisting of Delegates of the Health Committee of the Committee of the Office international d'hygiène publique assembled with a view to establishing such a scheme in accordance with the resolution of the Council of the League of Nations of January 30th, 1923.

REPORT BY THE SPECIAL MIXED COMMITTEE.

The Special Mixed Committee held its first meeting in Paris on May 27th, 1923, at the instance of the League of Nations, and concluded its work on June 2nd, 1923.

Reference.

By a Resolution of the Council of the League of Nations of January 30th, 1923, it was decided to constitute :

A Special Mixed Committee composed of an equal number of members of the Health Committee of the League and of the Office international d'hygiène publique. The duty of the Committee would be to prepare... a scheme for the constitution of the Permanent Health Organisation.

Acceptance by the Office international d'hygiène publique and Nomination of Members by the Office

At its meeting on May 17th, 1923 :

The Committee of the Office international d'hygiène publique :

In view of the fact that it has no authority to make changes in its own constitution and functions, that only the Governments of the countries adhering to the Office can modify the Rome Agreement of December 9th, 1907, and the Statute which are annexed to it ; and in view of the fact that the Committee has always declared its willingness to collaborate, within the limits of its powers, with the League of Nations :

Nominates MESSRS. BARRÈRE, JITTA, JORGE, GRANVILLE, STOCK, RAYNAUD, CANTACUZÈNE and DE NAVAILLES to study, with the delegates of the Health Committee of the League of Nations, the Health Organisation of the League, it being understood that they cannot accept any proposal which would entail any change in the constitution and functions of the Committee of the Office international d'hygiène publique.

Delegates of the Health Committee of the League of Nations.

The Health Committee, on its side, delegated Dr. MADSEN, Sir George BUCHANAN, Dr. LUTRARIO, Dr. CHODZKO, Professor BERNARD, Dr. CARRIÈRE, M. KUSAMA and Dr. CHAGAS.

Bureau.

In addition, M. de CAZOTTE and Dr. POTTEVIN, Director and Assistant Director of the Office international d'hygiène publique, and Dr. RAJCHMAN, Medical Director of the Health Section of the League of Nations, attended the meetings.

Substituted Member.

In the absence of M. Barrère, the delegates of the Office international d'hygiène publique appointed Surgeon-General CUMMING in his place.

Chairman.

In the absence, through illness, of M. Velghe, President of the Office international d'hygiène publique, and of M. Barrère (senior by age), Dr. GRANVILLE was elected Chairman of the Mixed Committee for the session.

The Mixed Committee, realising that the establishment of a single international health organisation, much as it is to be desired, is not attainable in present circumstances, considers that in the determination of health questions it is important to avoid the uncertainty and confusion to which the existence of two distinct organisations may give rise, and consequently that it is advisable to establish close relations between the health services of the League of Nations and the Office international d'hygiène publique by the constitution of the Health Organisation of the League on lines which correspond to those of the other technical services of the League.

After consideration, the following scheme was unanimously adopted :

The Health Organisation of the League of Nations consists of :

- (1) A General Advisory Health Council ;
- (2) A Standing Health Committee ;
- (3) A Health Section of the Secretariat of the League of Nations.

I. The Committee of the Office international d'hygiène publique will act as the General Advisory Health Council. The Office international d'hygiène publique will remain autonomous and retain its seat in Paris without any modification in its constitution or functions.

II. The Standing Health Committee will consist of the President of the Committee of the Office international d'hygiène publique and fifteen other members (public health experts or officers). Nine of these members will be appointed individually for three years by the Committee of the Office international d'hygiène publique in such a way that each State which is a permanent Member of the Council of the League of Nations is represented on the Standing Health Committee. The remaining six members will be appointed, also for a period of three years, by the Council of the League of Nations after consultation with the Standing Health Committee.

The Standing Health Committee may be supplemented by the addition of not more than four public health experts as assessors ; these assessors will be appointed by the Council of the League of Nations on the nomination of the Standing Health Committee and will be considered as fully effective members.

General Advisory Health Council.

I. The General Advisory Health Council will consider, discuss, advise or report on any question which may be submitted to it by the Standing Health Committee of the League of Nations.

II. It will initiate and transmit to the Standing Health Committee of the League of Nations any question which it may consider will be advanced by such a procedure.

III. The Health Section of the Secretariat of the League of Nations and the Office international d'hygiène publique will keep closely in touch. Each will communicate to the other all documents relating to its work.

A copy of each of these documents will be sent direct to every member of the Committee of the Office international d'hygiène publique and of the Standing Health Committee of the League of Nations.

IV. Supplementary expenses incurred by the Office international d'hygiène publique as the result of requests from the Council of the League of Nations will be defrayed by the General Secretariat of the League.

Standing Health Committee.

I. The Standing Health Committee will direct the health work of the League of Nations and, in particular, it will, through a Medical Director, direct the work of the Health Section of the Secretariat.

II. It will consider and report to the Council of the League of Nations on any public health question concerning the League of Nations which may be submitted to it or initiated by the Standing Health Committee itself.

III. It has the right to appoint special committees to consider any enquiry, research or other public health matter, and it has the power to add to such special sub-committees an outside person whose qualifications it may consider will further the purpose aimed at.

IV. In order to enable the General Advisory Health Council to fulfil its duties, the Standing Health Committee will forward to the President of the Committee of the Office internationale d'hygiène publique a yearly report relating to the work carried out by the Health Organisation of the League of Nations during the preceding years. This report will also set out the questions with which the Standing Health Committee proposes to deal, to the extent of its competence as defined by the Council and the Assembly of the League of Nations.

Health Section of the Secretariat of the League of Nations.

The Health Section of the Secretariat of the League of Nations will form the Secretariat of the Health Organisation of the League.

It will be under the direction of the Medical Director.

The functions and duties of the Health Section will be those laid down by the Standing Health Committee subject to approval by the Secretary-General of the League of Nations.

NOTE.

In the opinion of the Special Mixed Committee, the Director of the Office internationale d'hygiène publique and the Medical Director of the Health Section of the League of Nations should arrange for the most suitable means to ensure the centralisation and distribution of information relating to epidemic and other diseases.

Signed on behalf of the Committee :

(Signed) ALEX. GRANVILLE.

PARIS, June 2nd, 1923.

List of members present :

Professor LÉON BERNARD (France). Professor of Hygiene in the Faculty of Medicine of the University of Paris.

Sir GEORGE S. BUCHANAN, C.B. (Great Britain). Senior Medical Officer of the Ministry of Health, London.

Dr. JEAN CANTACUZÈNE (Roumania). Professor of the Faculty of Medicine at Bucharest.

Dr. H. CARRIÈRE (Switzerland). Director of the Federal Public Health Service, Bern.

Dr. CHAGAS (Brazil). Director of the Oswaldo Cruz Institute, Rio de Janeiro.

Dr. CHODZKO (Poland). Minister of Public Health.

Dr. H. CUMMING (United States of America). Surgeon-General of the Public Health Service of the U.S.A.

M. J. DE CAZOTTE, Director of the Office international d'hygiène publique.

M. DE NAVAILLES (Tunis). Chef de bureau, Ministère des affaires étrangères, Paris.

Dr. A. GRANVILLE, C.M.G., C.B.E. (Egypt). President of the Sanitary Maritime and Quarantine Board of Egypt.

Dr. N. M. JOSEPHUS JITTA (Netherlands). President of the Public Health Council of the Netherlands.

Professor RICARDO JORGE (Portugal). Director-General of Public Health, Ministry of Labour, Lisbon.

M. KUSAMA (Japan), of the Japanese Delegation to the League of Nations.

Dr. TH. MADSEN (Denmark). Director of the State Serum Institute, Copenhagen.

Dr. ALBERTO LUTRARIO (Italy). Director-General of Public Health, Ministry of the Interior, Rome.

Dr. POTTEVIN, Assistant Director of the Office international d'hygiène publique.

Dr. L. RAYNAUD (Algeria). Inspector-General, Services d'hygiène et de la Santé publique.

Dr. L. RAJCHMAN. Medical Director of the Health Section of the Secretariat of the League of Nations.

Dr. P. G. STOCK, C.B., C.B.E. (South Africa). Late Director of Medical Services, Union of South Africa.

Annex 16.

C. H. 111.

REPORT AND DRAFT MODEL CONVENTION FOR THE HEALTH CONTROL OF TRAFFIC ON WATERWAYS ADOPTED BY THE HEALTH COMMITTEE AT ITS MEETING OF JUNE 6TH, 1923 (6TH SESSION, MAY-JUNE 1923, IN PARIS).

Rapporteur : Dr. LUTRARIO, Director-General of Public Health in Italy.

It is nowadays universally admitted that waterways, rivers, or lakes may play a very important part in spreading epidemic infectious diseases, particularly those of intestinal origin. The part they play is undoubtedly, in certain circumstances, as significant as that rightly attributed to sea-routes, and it is sometimes more so; the great fluvial arteries and the great international lakes are particularly important.

The lines along which the great cholera epidemics, spread which, at different periods between 1882 and 1922, have invaded and depopulated Europe, provide a classic example.

The great cholera epidemics, which all originate in Northern Persia or the Hedjaz (the disease being brought into these countries by Shia or Sunni Moslem pilgrims coming from the regions in which cholera has for long been endemic), have always advanced into Europe first along the shores of the Caspian Sea, and thence, spreading over the vast basin of the Volga, have reached Central Russia and the rest of Europe. On other occasions they have come through the Black Sea basin, and spread first over South Russia, then through Central Russia, and finally reached the rest of Europe, and specially through the river systems formed by the basins of the Danube and the Dnieper, which acted as a medium for their dissemination. Modern scientific data concerning the etiology and pathogenesis of infectious diseases enable us to understand the cause of this phenomenon. We know that "man" is the main factor in the propagation of these diseases, but that their diffusion is also closely connected with the whole group of factors which constitute "traffic" in the widest sense of the term. In the particular case which we are now considering, this question will be examined not only in connection with waterways themselves, as a matter of part, — and, consequently, the various ways in which contamination may possibly reach them — but we shall also consider them as a "medium" for international traffic.

It is unnecessary for us to give any details regarding the waterways which may be termed international, or rather the international systems of water communication. It will be sufficient to point out that a vessel, even of considerable tonnage, may start from the Black Sea and, by navigating rivers, lakes, and canals, reach the Baltic, the North Sea, the English Channel, the Atlantic Ocean or the Mediterranean after crossing the whole of Europe.

It is just this complexity of the international systems of fluvial communications, which makes international fluvial traffic so different from seaborne traffic from a practical point of view, which lends such importance to fluvial waterways as regards the diffusion of epidemic infectious diseases, and which renders it absolutely necessary to draw up special regulations or international measures of sanitary protection.

These regulations, though in principle analogous to those which were taken as a basis for the International Health Convention of Paris in 1912, should, if they are to be applied in a practical manner, be adapted to conform to the special characteristics of waterways and the health or prophylactic organisations of the countries concerned.

* * *

We think it may be advisable to recapitulate briefly the characteristics of international fluvial traffic, in order that we may establish the principal points to which special measures or health protection should apply :

(1) *Waterways.* — Each waterway must be considered not only as an isolated unit (*bassin* or *confluence*), but in its relations with the other waterways with which it is connected either by artificial canals, lakes, or even other waterways.

From the point of view of international health protection, therefore, fluvial waterways may be considered as "systems", which may be again subdivided into "sectors".

(2) *Vessels.* — It may be said, generally speaking, that interfluvial waterways may be traversed by vessels of medium tonnage.

There is hardly any need to point out the great variety of vessels employed for this purpose. They range from rowing-boats to sailing-vessels and steamers; from small pleasure boats to passenger boats; from fishing-boats to cargo vessels and barges, either self-propelled or towed in convoys by tugs. We might also add to this list rafts, which form so characteristic a feature.

When we consider the nature of the craft and the goods they carry, it is easy to understand how complex are the factors with which we have to deal in fluvial navigation, particularly from the point of view of the danger to health.

Among such factors we should draw particular attention to the following :

- (a) The arrangements on board vessels as regards : (1) cleanliness ; (2) drinking water, its storage and distribution ; (3) latrine arrangements ; (4) the disinfection of bilge water ; (5) the destruction of rats, etc.
- (b) The crew (and members of the crew's families who may be on board), mainly as regards their instruction in the matter of hygiene, particularly from the point of view of the importance of waterways as a medium for the propagation of infectious diseases (the throwing of sewage and garbage from the vessel into water-courses, and the use of river, canal or lake water for drinking purposes).
- (c) Passengers, particularly if they come from places in which infectious diseases exist in an endemic or epidemic form.
- (d) The relative speed of the vessel. This speed is influenced by the necessities of the traffic, the obstacles on waterways (swing bridges, pontoon bridges, dam locks, sluices, etc.) and by meteorological conditions (wind, rain, squalls, etc.).
- (e) The nature of the goods carried, in their relationship to the diseases referred to in the present Convention.

II. — *Health Measures.*

Let us now consider what special sanitary measures can be taken to protect us again the danger of the propagation of infectious diseases through the agency of fluvial waterway. It may be well to point out :

(a) That almost all the countries concerned have long experienced the need for applying special protective health measures in connection with the transport traffic over their own waterways. They have issued either general or special regulations (the Netherlands, German Austria-Hungary, Serbia, Italy). The object of most of these regulations is to prevent the appearance and dissemination of cholera and plague along the waterways of each of the States concerned.

(b) That certain countries have already realised the necessity for concluding agreements for the unification of prophylactic measures to be enforced in the case of a cholera epidemic (conventions between Germany and Russia, and between Austria-Hungary and Serbia), taking as their basis the main principles laid down in the International Health Conventions.

But these are measures which may be regarded as exceptional and which do not apply to all infectious diseases that are liable to become epidemic ; moreover, from an international point of view, they lack that degree of co-ordination which is indispensable if we are to ensure both uniformity of measures and effective results, while causing the least possible inconvenience to transport.

* * *

This question was considered for the first time at the European Health Conference in Warsaw in 1922, and its resolutions were afterwards adopted by the International Conference at Genoa. These resolutions lay down the main lines which should be followed as regards the regulation of international fluvial transport from a health point of view.

The Health Committee of the League of Nations, when it approved the resolutions of the Mixed Sub-Committee on Waterways (which was composed of members of the Health Committee and the Advisory Committee on Communications and Transit), laid down the following principles :

(1) In principle, it is the duty of the riparian States of an international waterway to communicate regularly and frankly any information at their disposal on questions relating to infectious diseases of every kind.

(2) In accordance with the principles laid down in the Paris International Health Convention of 1912, measures taken against infectious diseases should, as far as possible, avoid placing any obstacle in the way of commerce and commercial relations both in the interior and with neighbouring countries.

(3) It is essential that the sanitary control of traffic of internal waterways should be the duty of the Public Health Authorities of the State.

For waterways of international concern, without prejudice to the possibility of special provisions for portions of these waterways carrying important traffic, the control of sanitary measures should be the duty of the Public Health Service of the riparian States. In cases where an international body, qualified from the sanitary point of view, has been or is to be established over these waterways, this body will be responsible for the execution of the necessary measures.

(4) The service of control should be organised in normal times in such a way that it may be able to deal with any emergency. With this object in view, it is necessary to resort as much as possible to the organisations and arrangements which already exist in each country, directing their activity towards their new duties.

The arrangements should be of an extremely simple character and should, whenever possible, be improvised.

(5) Periodical conferences should be organised between the heads of the health departments or services concerned to ensure the satisfactory working of the service.

(6) The collaboration of the Health Committee and the Committee on Communications and Transit of the League of Nations should be close and permanent in all that concerns the above problems, which are of equal interest to both bodies.

* * *

The draft International Health Convention on Fluvial Navigation, which I have the honour to transmit with the present report includes :

- (a) General arrangements ;
- (b) The organisation of the Health Supervision Service ;
- (c) Method of working.

Part I contains a general explanation of the objects of the regulations (Chapter I) and considers (Chapter II) what organisations should be responsible for health supervision (section

: The exchange of health information (Section II), a list of the infectious diseases to which the health measures provided for in the regulations are to apply, and the methods of notifying these diseases (Section III).

Part II relates to the organisation of the Health Supervision Service, and concerns : vessels (Chapter I), health stations and other prophylactic establishments connected therewith (Chapter II).

Part III relates to the working of the Health Supervision Service, and contains :

General provisions concerning methods of working (Chapter I).

Special provisions for each of the infectious diseases to which the regulations refer (Chapter II).

Model Convention for the Health Supervision of Traffic over Waterways.

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CHAPTER I. — GENERAL PROVISIONS.

- Art. 23. Agreements for the working of health stations (including their working normal times).
- Art. 24. Circumstances entailing the compulsory entry into operation of health stations.
- Art. 25. Notification of sectors in which health stations should come into action.
- Art. 26. General measures to prevent the spread of infectious diseases.
- Art. 27. Measures to be taken by health stations.
- Art. 28. Issue of bills of health.

CHAPTER II. — SPECIAL PROVISIONS.

A. — Cholera.

- Art. 29. Cholera.

B. — Plague.

- Art. 30. Plague.
- Art. 31. Measures to be taken in case of abnormal mortality of rats on board.

C. — Provisions which are equally applicable to Cholera and Plague.

- Art. 32. Health supervision.
- Art. 33. Measures to be taken in respect of vessels which have not complied with the regulations, etc.

D. — Typhus and Relapsing Fever.

- Art. 34. Typhus and relapsing fever.

E. — Dysentery.

- Art. 35. Dysentery.

F. — Smallpox.

- Art. 36. Smallpox.

PART I.

CHAPTER I.

OBJECT OF THE CONVENTION.

Article 1.

The Governments of States within whose territory are situated navigable lakes or waterways of an international character, or national systems of navigable waterways communicating direct with the above-mentioned waterways, undertake to observe the provisions of the present Convention, in conjunction with health conventions and with Article 35 of the International Health Convention, Paris, of January 17th, 1912. These provisions concern the health supervision of navigation over these waterways and are intended to bring about uniformity of health measures and to ensure that they shall be effective in the prevention of the spread of infectious diseases.

In the case of waterways which carry particularly important international traffic, States may conclude special agreements with each other in conformity with the principles provided in the present Convention.

CHAPTER II.

SUPERVISORY BODIES. HEALTH INFORMATION. NOTIFICATIONS.

Section I.

SUPERVISORY BODIES.

Article 2.

Health supervision on the navigable waterways and lakes referred to in the preceding article shall be carried out by each of the High Contracting Parties through its own Public Health Department.

Article 3.

In order :

- (a) To preserve the necessary co-ordination and unity of action ;
- (b) To ensure the smooth working of the system of health supervision ;

The heads of the public health departments of the States concerned shall meet at least once a year at a place to be selected by common agreement on each occasion.

Article 4.

Should differences of opinion arise regarding the application of the health supervision provided for in this Convention, the High Contracting Parties concerned may request the League of Nations to act as mediator.

Article 5.

The Health Organisation of the League of Nations may, in agreement with the Public Health Departments of the States concerned, arrange for technical inspections of the system of health supervision in operation on navigable waterways belonging to States signatory to the present Convention.

In cases where an international body duly qualified from the sanitary point of view, either by international treaties or by the League of Nations, has been or is to be established over these waterways, this body will be responsible for the execution of the measures laid down in the present Convention.

Article 6.

At the close of each year, the Public Health Departments of the High Contracting Parties shall send to the Health Organisation of the League of Nations reports on the working during the year of the health supervision on the various navigable waterways concerned.

Section II.

EXCHANGE OF HEALTH INFORMATION.

Article 7.

The High Contracting Parties undertake to communicate to the neighbouring riparian States which have signed the present Convention all information as to the health conditions in their respective countries and particularly as to the position with regard to the infectious diseases to which the provisions of this Convention apply.

This information shall be exchanged direct in a regular and periodical manner between the Public Health Departments concerned. Copies of the documents shall be forwarded to the Health Section of the Secretariat of the League of Nations.

Section III.

NOTIFICATION OF CASES OF CHOLERA, PLAGUE, TYPHUS, RELAPSING FEVER, DYSENTERY,
SMALLPOX AND INFLUENZA.

Article 9.

The High Contracting Parties further undertake reciprocally to give immediate notice of :

- (a) The first appearance of plague or cholera certified in the territory of each of the States concerned ;
- (b) Any epidemic centres of typhus, relapsing fever, dysentery or smallpox in their respective territories ;
- (c) Any appearance of influenza of an epidemic character.

The High Contracting Parties shall forward the same information to the Health Section of the Secretariat of the League of Nations.

Article 9.

The notification referred to in the preceding article shall include circumstantial details regarding the following points :

- (1) The place at which the disease first appeared ;
- (2) The date of appearance and the clinical form of the disease ;
- (3) The number of cases established ;
- (4) The extent of the area in which cases have occurred ; and in particular, whether or not this area is situated in the basins of rivers or lakes which form part of a system of navigable waterways (see Article 1) ;
- (5) In the case of plague, whether there is an abnormal mortality among rats ;
- (6) What immediate measures have been taken.

Article 10.

The notifications referred to in Article 8 shall be exchanged directly between the Public Health Departments of the High Contracting Parties, regard being had to the procedure laid down in the International Health Conventions in force.

Article 11.

The notifications and exchange of information provided for in Articles 8 and 9 shall be followed by further communications which shall be forwarded regularly to the Public Health Departments of the Contracting States and to the Health Section of the Secretariat.

In particular, these communications shall contain details as to the precautions taken to combat the disease, especially precautions taken in accordance with the provisions of the present Convention.

Article 12.

The High Contracting Parties undertake to reply to any request addressed to them by the Health Section of the Secretariat for information regarding epidemic diseases which may have broken out in their respective territories.

PART II.

ORGANISATION OF THE SYSTEM OF SUPERVISION.

CHAPTER I.

VESSELS.

Article 13.

The High Contracting Parties undertake to compile, in respect of every navigable waterway (river, lake or canal), a census of vessels, giving the following information :

- Name of captain or master, and where this is unobtainable, name of owner ;
- Normal number of crew and other persons ordinarily resident on board (families) ;
- Name, tonnage and distinguishing marks of vessels ;
- Appliances, if any, for the supply and distribution of drinking water ; latrine arrangements.

The above-mentioned details shall be entered in a special register, which shall thereafter be kept up to date.

Article 14.

It is desirable that at all times vessels should be provided with :

- (1) Arrangements to ensure cleanliness on board ;
- (2) Drinking-water tanks which can be kept free from all contamination and which are fitted with suitable appliances for distribution ;
- (3) Latrines which, if portable, shall be fitted with receptacles (buckets) in which excrement can be regularly disinfected before they are emptied.

If the latrines are fixed, they shall be fitted with disinfected pans in which excrement can be disinfected before they are emptied.

Vessels should be provided with a sufficient supply of disinfectants as indicated in Annex I.

It is desirable that the High Contracting Parties should take the necessary steps to ensure at all times :

- (a) That vessels be cleared of rats at least once every six months, regard being had to the nature of the vessels and of their cargo ;
- (b) That bilge-water be periodically disinfected.

Article 15.

It is desirable that instruction should be given to the personnel of vessels (captains, masters, seamen, bargees, crews of rafts, etc.) on the importance of waterways as a medium for the propagation of infectious diseases. This instruction should be given :

(a) By elementary courses explaining the rudiments of hygiene, the most characteristic symptoms of the principal infectious diseases and the prophylactic measures to be taken against them ;

(b) By distributing booklets and leaflets containing instructions and advice, in popular language, regarding precautions to be taken by individuals against infectious diseases ;

(c) In particular, by warning the crews of vessels of the risks involved by using the water in navigable waterways for drinking.

CHAPTER II.

HEALTH STATIONS AND OTHER PROPHYLACTIC ESTABLISHMENTS.

Article 16.

In view of the necessity of subjecting vessels to health supervision in normal times, and particularly in case of threatened epidemics, the High Contracting Parties undertake to provide for the organisation of special health stations along waterways of international concern.

Such health stations :

(a) Shall be provided with a trained staff (medical and subordinate) and with prophylactic appliances proportionate to the volume of traffic ;

(b) Shall be placed along the waterways at such intervals as will ensure the inspection of vessels at least once in every 24 hours.

Article 17.

The existence of health stations shall be shown by the following signs so set up as to attract attention :

(a) Notices with the inscription — “ *Stop ! Health Inspection Station* ” ;

(b) By day, a yellow flag ; by night, one white and one red light, both at the same distance above ground.

Article 18.

Health stations of all degrees of importance shall be furnished with the following prophylactic appliances :

Inspection room ;

Disinfection and delousing rooms ;

Shower-bath room ;

Temporary or permanent isolation ward for persons suffering from infectious diseases ;

Appliances for destroying rats ;

Boxes for the transport of samples of drinking water ;

Boxes for the transport of pathological material.

As far as local resources and supplies permit, it is recommended that material available on the spot should be used in case of need.

There should also be attached to every health station a pit in which excrement and foul water from vessels calling at the health station may be deposited, and destroyed or rendered innocuous.

Article 19.

Health stations should, if they are not themselves provided with isolation premises, be connected with adequate isolation hospitals for infectious diseases, and with bacteriological laboratories.

Article 20.

It is desirable that special courses of instruction should be held for the staff appointed to health supervision stations.

Article 21.

The High Contracting Parties undertake to provide, at convenient intervals, stations for the supply of drinking water of good quality to vessels.

These stations shall be brought to the attention of boatmen by notices reading : "*Supply of Drinking Water*", and a green flag.

During the night the site shall be illuminated by one white and one green light, both at the same distance above ground.

Article 22.

Each of the High Contracting Parties shall have a special map prepared showing, for each of the waterways which concern it :

Health supervision stations ;

Disinfection stations ;

Isolation hospitals for infectious diseases, and bacteriological laboratories for the use of health stations ;

Stations for the supply of drinking water, etc.

These maps shall be transmitted by each country to the other signatory States, and to the Health Section of the Secretariat.

PART III.

METHOD OF WORKING.

CHAPTER I.

GENERAL PROVISIONS.

Article 23.

The High Contracting Parties may agree upon the working, even in normal times, of health supervision stations and other prophylactic institutions either at their frontiers, or in those portions of the waterways concerned in which they may consider such provision desirable.

Article 24.

As soon as plague, cholera, or epidemic centres of typhus, relapsing fever, dysentery or smallpox appear in the basin on any lake or river forming part of a system of waterways of international concern (unless such cases are imported), the health supervision on navigation shall immediately come into force in the affected or threatened sections of the waterway. This supervision shall be carried out by the health stations provided for in Article 16, and shall consist of measures to be taken both ashore and on board vessels.

The extent and stringency of such supervision shall be regulated in proportion to the seriousness of the danger.

Article 25.

The Governments concerned in the execution of health supervision, under the conditions referred to in the preceding articles, shall immediately notify to the other States concerned and to the Health Section of the Secretariat, those sections of the navigable waterways in question which they consider to be threatened or affected and in which they have put this health supervision into force.

Article 26.

The object of the steps to be taken ashore in threatened sectors, in accordance with Article 24, shall be :

(a) To prevent the embarkation of persons showing definite symptoms of, or suspected of suffering from, any of the infectious diseases mentioned in Article 8,

and of individuals in the immediate company of such sick persons, if these individuals may reasonably be regarded as capable of transmitting the disease;

(b) To prevent the exportation of goods or any other objects which may be regarded as infected, in accordance with the International Health Conventions in force, and which have not previously been disinfected ashore under the supervision of the medical officer appointed by the public health authority;

(c) In case of plague, to prevent rats from going on board.

Article 27.

The object of the steps to be taken on board vessels in affected or threatened sectors in accordance with Article 24 should be :

(a) To investigate the state of health of persons on board (passengers and crew) ;

(b) To enforce the execution of the provisions of Article 14 ;

(c) To issue free of charge, to persons under medical observation, a medical passport on the model given in Appendix 2 ;

(d) To isolate persons suffering from any of the infectious diseases referred to in the present Convention ;

(e) To place contracts under medical observation in accordance with the provisions of the International Health Conventions in force ;

(f) To carry out disinfection, destruction of rats and vermin.

(g) To carry out preventive vaccination, particularly in the case of the crews of vessels and persons employed in health supervision or in duties connected with fluvial navigation ;

(h) To issue free of charge, to vessels and to persons who may apply for them, certificates showing the health measures to which they have been subjected.

Article 28.

As soon as the sanitary supervision is put into force, every vessel shall be furnished by the nearest health station with a "Bill of health" on the model given in Appendix 3.

For vessels on the sea-going register, the bill of health shall be obtained by the persons responsible for the vessels from the first health station on entering the river navigation area.

The bill of health shall include a record of all observations regarding the hygienic condition of the vessel, and shall indicate the health measures to which it has been subjected.

CHAPTER II.

SPECIAL PROVISIONS.

A. — Cholera.

Article 29.

In case of the appearance of cholera, in addition to the general precautions laid down in Articles 14, 15, 26, 27 and 28, the following special steps shall be taken :

In the event of persons being discovered on board who show definite symptoms of, or are suspected of suffering from, cholera, the vessel shall be isolated — such isolation to continue until the following measures have been taken :

(a) Any infected person or persons shall at once be disembarked and isolated;

(b) Persons who have been in contact with infected persons shall be placed under medical observation during a period of five days.

The Health Authority shall, in consideration of the state of the vessel and of local conditions, determine whether the medical observation is to be carried out on board or on shore.

(c) All other persons shall be placed under medical observation during a period of five days, reckoned from the date of the disembarkation of the infected persons, of the placing under observation of those who had been in contact with them, and of the carrying out of measures of disinfection ;

(d) The Health Authority shall have the right to conduct any bacteriological examination which may be considered necessary, provided that the period of five days is not exceeded.

(e) Any parts of the vessel and any objects which may be considered to be contaminated shall be disinfected.

B. — Plague.

Article 30.

In case of the appearance of plague, in addition to the general precautions laid down in articles 14, 15, 26, 27 and 28, the following special steps shall be taken :

(1) All vessels shall be supplied with an adequate number of rat-traps ; the cables, chains, etc., shall be provided with effective means of preventing the passage of rats from the shore

to the vessel or vice versa ; in unloading cargoes the necessary precautions shall be taken to prevent the escape and ensure the destruction of any rats contained therein.

(2) In the event of persons being discovered on board who show definite symptoms of, or are suspected of suffering from plague, the vessel shall be isolated — such isolation to continue until the following measures have been taken ;

(a) Persons who are infected or suspected of being infected shall immediately be disembarked and isolated ;

(b) Persons who have been in contact with infected persons shall be placed under medical observation during a period of five days. The Public Health Authority shall determine whether such medical observation shall be carried out ashore or on board ;

(c) All rats on the vessel shall be destroyed. The Public Health Authority shall determine whether the operation is to be carried out before or after the unloading of the cargo ;

(d) Parts of the vessel and objects which may be considered to be contaminated shall be disinfected ;

(e) All other persons shall be placed under medical observation during a period of five days, reckoned from the date of the disembarkation of the infected persons, of the placing under observation of persons who have been in contact with them, and of the carrying out of measures of disinfection.

Article 31.

In the event of an abnormal mortality occurring among the rats on board, the measures prescribed in paragraphs (c), (d) and (e) of the preceding article shall be carried out.

C. — *Provisions Common to Cholera and Plague.*

Article 32.

All persons who disembark from vessels coming from or navigating in areas threatened with cholera or plague shall, if the conditions laid down in Article 29, paragraph 2, for cholera or Article 30, paragraph 2 for plague, have not been carried out, be placed under medical observation during a period of five days.

The crews shall also be placed under medical observation during a period of five days, reckoned from the date at which they left the health station established between the affected area and the immune area.

In the event of the vessels not leaving the affected area, the crews shall remain under medical observation during their stay at each port of call, until the end of the fifth day.

Article 33.

Vessels on which the hygienic conditions are unsatisfactory, or which have not complied with the regulations contained in the present Convention, shall be dealt with in the manner laid down in Article 29, paragraph 2, or Article 30, paragraph 2, according as cholera or plague is involved.

D. — *Typhus and Relapsing Fever.*

Article 34.

In case of the appearance of typhus or relapsing fever, in addition to the general precautions laid down in Articles 14, 15, 26, 27 and 28, the following special steps shall be taken :

In the event of persons being discovered who show definite symptoms of, or are suspected of suffering from, typhus or relapsing fever, the vessel shall be immediately isolated — such isolation to continue until the following measures have been taken :

(a) Persons who are infected, or suspected of being infected, shall be immediately disembarked and placed in an isolation hospital, after disinsectisation ;

(b) Persons who have been in contact with infected persons, and other persons who disembark and whose hygienic condition and personal cleanliness are not satisfactory, shall be subjected to disinsectisation and placed under medical observation for a period of 12 days, reckoned from the date of disembarkation ;

(c) Any parts of the vessel and any objects which may be considered to be contaminated shall be subjected to disinfection and disinsectisation.

E. — *Dysentery.*

Article 35.

In case of the appearance of dysentery, in addition to the general precaution laid down in Articles 14, 15, 26, 27 and 28, the following special steps shall be taken :

In the event of persons being discovered on board who show symptoms of dysentery, the precautions mentioned in Article 29, paragraphs (a) and (d), shall be carried out.

F. — *Smallpox.*

Article 36.

In case of the appearance of smallpox, in addition to the general precautions laid down in Articles 14, 15, 26, 27 and 28, the following special steps shall be taken :

In the event of persons being discovered who show definite symptoms of, or are suspected of suffering from smallpox, the vessel shall be isolated, such isolation to continue until the following measures have been taken :

(a) Persons who are infected, or suspected of being infected, shall be disembarked and isolated ;

(b) Persons who have been in contact with infected persons, or who may reasonably be regarded as having been exposed to infection on board, and who, in the opinion of the health authorities, are not adequately protected by recent vaccination or by a previous attack of smallpox, may be required to undergo vaccination against smallpox, or may be placed under medical observation for a period of 14 days, reckoned from the date of disembarkation.

(c) Any portions of the boat and any objects which may be considered to be contaminated shall be disinfected.

APPENDIX 1.

C. H. 111. (a).

(Article 14 of the Scheme.)

LIST OF DISINFECTANTS WITH WHICH VESSELS MUST BE PROVIDED.

- (1) Quicklime.
- (2) Laplace's Mixture.
- (3) Chloride of Lime.
- (4) Cresol.

N.B. — The amount of each of the disinfectants referred to shall be fixed by the Public Health Authorities concerned, on the basis of the tonnage of the vessels and of the number of persons on board. Such amount must in any case be sufficient for all requirements for at least 48 hours.

APPENDIX 2.

(Article 28 of the Programme.)

IDENTITY CERTIFICATES.

(Cover of booklet.)

IDENTITY CERTIFICATES.

(Medical Passport.)

N.B. — The booklet consists of 50 or more identity certificates.

(Counterfoil.)

Public Health Office at

MEDICAL PASSPORT.

(Identity Certificate.) No. 1.

Health Station at

Mr. of

who has arrived here to-day from and has stated that he is proceeding to being placed under medical observation (International Health Convention concluded at Paris in 1912) for a period of days, is required to report within 24 hours of his arrival to the Health Officer of the Commune to which he is proceeding, and similarly to the Health Officers of any Communes to which he may subsequently proceed, until the expiration of the period of observation.

Failure to comply with this order is punishable by (penalty provided for by the health legislation of each of the countries concerned).

Dated

Medical Officer in charge
of the Sanitary Station.

APPENDIX 3.

(Article 29 of the Scheme.)

BILL OF HEALTH.

(Cover of the booklet.)

COUNTRY

BILL OF HEALTH No.

for the Health Supervision of Traffic on Inland Waterways.

Class of vessel ¹ Name
 or designated by the sign or letter
 or number of tons.
 owned by domiciled at
 name of master resident at
 flying the flag
 Waterways habitually used by the vessel
 Remarks (if any)
 Issued at on (date)

Master of the Vessel.

Authority by whom the Bill of Health is issued :

¹ Indicate whether steamer, tug, lugger, tartan, large or small boat, motor boat, yacht, etc.

N.B. — The booklet consists of 50 or more sheets.

(Number)

..... Portable latrines composed of
 placed
 Fixed latrines placed
 provided with means for the disinfection of excrements.
 Tanks for drinking-water, composed of and furnished
 with (means of distribution)

Disinfectants with which the vessel must be provided :

Quicklime kg.
 Laplace's Mixture litres.
 Chloride of lime kg.
 Cresol litres.

Number of "Paratopi" (appliance for preventing rats coming on board or going ashore, with which the vessel must be provided)

Number of traps with which the vessel must be provided

Seen : ²

² Authority by whom the bill of health is issued.

(Counterfoil.)

Series No.

Inspection No.

HEALTH SUPERVISION STATION AT

Lake, River or Canal.	Number of persons on board.	Next Port of call Last Port of call Route Destination	Sanitary measures adopted by the Health Station and Remarks.
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The next inspection will take place at the Health Station at

..... Medical officer in charge of the Health Station.

Space reserved for the names (in the form of an index or systematised list) of the Health Stations on the inter-fluvial routes concerned.

N.B. — This booklet must be handed to the Authorities at each Health Supervision Station and will be returned when the sheet concerning the passage of the vessel through the Health Station in question has been filled up.

GENEVA, August 13th, 1923.

LEAGUE OF NATIONS

HEALTH COMMITTEE

REPORT ON THE WORK OF THE SIXTH SESSION.

The Secretary-General has the honour, in accordance with the instructions of the Council, to circulate to Members of the League and Delegates at the Assembly, the following documents concerning the Scheme for the Constitution of the Permanent Health Organisation of the League :

- (1) Report by Viscount Ishii, on the work of the Health Committee, presented to the Council on July 7th, 1923.
- (2) Minutes of the Meeting of the Council held on the July 7th, 1923.
- (3) Scheme for the Permanent Health Organisation of the League of Nations.

REPORT BY VISCOUNT ISHII, ON THE WORK OF THE HEALTH COMMITTEE, PRESENTED TO THE COUNCIL ON THE 7TH JULY, 1923.

The Council has already taken note of the report on the work accomplished by the Health Committee at its last session which was held at Paris in May-June last.

I have drawn up a report on the work accomplished by the Health Committee at that session and I should like to add that the list of subjects dealt with is a proof of the activity which is being displayed by our technical organisations. In view, however, of certain reservations made by the French Government regarding the retention on the agenda of this session of the Council of questions which have not yet been considered by the Government of the French Republic, I have altered my original report and propose to discuss the two questions which are of a really urgent nature.

I shall therefore have the honour of submitting to the Council, at its next session, a report on the other questions dealt with at the sixth session of the Health Committee.

As regards the two urgent questions, I would draw your attention to the fact that the Committee had occasion, once more, during this meeting, to thank the Rockefeller Foundation for the generous contribution which it is prepared to grant to the Health Organisation of the League of Nations. Thanks to this support, the Committee has been able to achieve a further advance in international co-operation. In the field of international health statistics, the Committee will be enabled, by bringing medical statisticians of different countries into more frequent contact with each other, to ensure a better distribution of work and to eliminate useless differences which entail loss of time.

I therefore propose that you should adopt the following resolutions :

"The Council desires to thank the Rockefeller Foundation for the generous contribution which it has placed at the disposal of the Health Organisation of the League with a view to the unification of methods of compiling health statistics, and it authorises the Medical Director to enter into formal communication with the International Health Board of the Rockefeller Foundation and to determine, with the concurrence of the Chairman of the Health Committee, the outlines of the scheme by which the new contribution from the International Health Board may be most fruitfully utilised for the purpose already referred to."

Secondly, in conformity with the resolutions of the last Assembly, which desired to perfect the technical mechanism of the League, the Committee approved the draft constitution of our Permanent Health Organisation which had been submitted to it. The task of preparing the constitution had been entrusted, by a Council resolution dated January 30th, 1923, to a fixed Commission of the Health Committee of the League of Nations and of the Office International d'hygiène publique; if it should be adopted, co-operation and the division of labour between these two organisations will be ensured, thus avoiding duplication of work

and waste of time. I beg to point out to my colleagues that this arrangement will not result in any increase in the budget of the League. This budget will be drawn upon for any supplementary expenses which may result from applications addressed to the Office international d'hygiène publique by the Council of the League. In any event, the League will only be called upon in exceptional cases to meet the additional expenditure of the Office international. The Committee of the Office meets twice yearly and defrays the cost of its own sessions. It will very seldom be necessary either to convene the Committee for an extraordinary third session or to prolong any of its sessions.

We may congratulate ourselves on the very definite results already attained by the Mixed Commission which met at Paris. As was to be expected from the experience gained with other Commissions of the League, it has given our Health Committee the elasticity which it required and it has made provision — subject, of course, to the approval of the Council — for the formation of sub-committees, the calling in of experts, etc. It has laid down that the work of the Health Committee should be carried on within the limits of its competence as defined by the Council and the Assembly of the League. It is therefore clear that your approval will always be sought in the cases for which you have provided on previous occasions when the reports of the Health Committee have come before you during the last two years.

Thus organised, the Health Committee will carry on the health work of the League of Nations. Its executive organ, *i.e.*, the Health Section of the Secretariat, will remain under the orders of the Secretary-General, to whom it will be responsible, but as regards technical matters it will be subject to the guidance of the Health Committee.

I, therefore, propose the adoption of the following resolution :

“The Council approves the scheme of the Permanent Health Organisation drawn up by the Commission and decides that it be submitted for examination to the Assembly.”

Before concluding this partial survey of the work of the Health Committee, I desire to congratulate the members of the Epidemic Commission, on behalf of my colleagues, for the active vaccination campaign which they have carried on during the last few months amongst the refugees in Greece. I am sure that the Council will join with me in congratulating them on the devotion with which they have carried this immense undertaking to a successful conclusion.

MINUTES OF THE MEETING OF THE COUNCIL HELD ON JULY 7TH, 1923.

Viscount ISHII read a report (Annex 543) on the work of the Health Committee, together with the following resolutions :

“ I. The Council desires to thank the Rockefeller Foundation for the generous contribution which it has placed at the disposal of the Health Organisation of the League with a view to the unification of methods of compiling health statistics, and it authorises the medical director to enter into formal communication with the International Health Board of the Rockefeller Foundation and to determine, with the concurrence of the Chairman of the Health Committee, the outlines of the scheme by which the new contribution from the International Health Board may be most fruitfully utilised for the purpose already referred to.”

“ II. The Council approves the scheme of the Permanent Health Organisation (Annex 543b) drawn up by the Commission, and decides that it be submitted for examination to the Assembly.”

Lord ROBERT CECIL pointed out that in the resolution before the Council it stated that the activities of the Standing Health Committee would remain within the limits of its authority as fixed by the Council and the Assembly of the League of Nations. He desired to call the attention of the Council to one of the clauses in the draft scheme proposed by the Mixed Committee ; otherwise he had no criticism to make. The clause to which he desired to refer was Clause 1, under the heading “ Standing Health Committee ”. This clause stated that the “ Standing Health Committee will direct the Health work of the League of Nations, and, in particular, it will, through a Medical Director, direct the work of the Health Section of the Secretariat ”. He thought that it would have been right to have said : “ Subject to the direction of the Council ”, or something of that kind, in order to preserve some control by the Council or Assembly of the League of this Standing Health Committee. It might be only a question of drafting, but, as it stood, it appeared to be giving to this Standing Health Committee the right to take action independently of the Council of the League. He thought there was some difficulty in this because the Standing Health Committee was not solely composed of people who were connected with the League.

He had no objection at all to the constitution of the Committee, but it seemed strange to give to a Committee so constituted the right to direct the Health work of the League of Nations without control by any organ of the League.

The SECRETARY-GENERAL said that there could not really be any difficulty about the question because all the technical organisations were governed by resolutions of the Council taken at Rome. The Council had the authority demanded by Lord Robert Cecil, and further,

of course, the budget was established by the Council and the Assembly, and the Committee could only work within those limits. The interpretation given in the report was, in his opinion, quite satisfactory. He hoped it would be passed, as the text was the result of most laborious deliberations.

M. HANOTAUX agreed with the Rapporteur's proposal. He suggested that the scheme should be sent to the Assembly, together with the Minutes of the present meeting of the Council. The Council could not, at the moment, undertake the task of bringing that independent organisation into harmony with the League of Nations.

Lord ROBERT CECIL said that he did not want to do anything that would hinder in any way the setting up of this organisation, which was a most valuable one. He was ready to adopt the report, subject to what had been said at the meeting, which would make it quite clear that the Health Organisation was to work under the direction of the Council.

It was decided that Viscount Ishii's report should be communicated to the Assembly together with the Minutes of the meeting.

SCHEME FOR THE PERMANENT HEALTH ORGANISATION OF THE LEAGUE OF NATIONS

DRAFTED BY THE SPECIAL MIXED COMMITTEE CONSISTING OF DELEGATES OF THE HEALTH COMMITTEE OF THE LEAGUE AND DELEGATES OF THE COMITÉ DE L'OFFICE INTERNATIONAL D'HYGIÈNE PUBLIQUE ASSEMBLED WITH A VIEW TO ESTABLISHING SUCH A SCHEME IN ACCORDANCE WITH THE RESOLUTION OF THE COUNCIL OF THE LEAGUE OF JANUARY 30TH, 1923.

Approved by the Council on July 7th, 1923.

The Special Mixed Committee held its first meeting at Paris on May 27th, 1923, at the instance of the League of Nations, and concluded its work on June 2nd, 1923.

Reference.

By a resolution of the Council of the League of Nations of January 30th, 1923, it was decided to constitute :

"A Special Mixed Committee composed of an equal number of members of the Health Committee of the League and of the Office international d'hygiène publique... The duty of the Committee would be to prepare... a scheme for the constitution of the Permanent Health Organisation."

Acceptance by the Office international d'hygiène publique and Nomination of Members by the Office.

At its meeting of May 17th, 1923 :

"The Committee of the Office international d'hygiène publique :

"In view of the fact that it has no authority to make any changes in its own constitution and functions, that only the Governments of the countries adhering to the Office can modify the Rome Agreement of December 9th, 1907, and the Statutes which are annexed to it ; and in view of the fact that the Committee has always declared its willingness to collaborate, within the limits of its powers, with the League of Nations :

"Nominates Messrs. BARRÈRE, JITTA, JORGE, GRANVILLE, STOCK, RAYNAUD, CANTACUZÈNE and DE NAVAILLES to study, with the delegates of the Health Committee of the League of Nations, the Health Organisation of the League, it being understood that they cannot accept any proposal which would entail any change in the constitution and functions of the Committee of the Office international d'hygiène publique."

Delegates of the Health Committee of the League of Nations.

The Health Committee, on its side, delegated Dr. MADSEN, Sir George BUCHANAN, Dr. LUTRARIO, Dr. CHODZKO, Professor Léon BERNARD, Dr. CARRIÈRE, M. KUSAMA and Dr. CHAGAS.

Bureau.

In addition, M. DE CAZOTTE and Dr. POTTEVIN, Director and Assistant Director of the Office international d'hygiène publique, and Dr. RAJCHMAN, Medical Director of the Health section of the League of Nations, attended the meetings.

Substituted Member.

In the absence of M. BARRÈRE, the delegates of the Office international d'hygiène publique appointed Surgeon-General CUMMING in his place.

Chairman.

In the absence, through illness, of M. Velghe, President of the Office international d'hygiène publique, and of M. Barrère (senior by age), Dr. GRANVILLE was elected Chairman of the Mixed Committee for the session.

The Mixed Committee, realising that the establishment of a single international health organisation, much as it is to be desired, is not attainable in present circumstances, considers that in the determination of health questions it is important to avoid the uncertainty and confusion to which the existence of two distinct organisations may give rise, and consequently that it is advisable to establish close relations between the health services of the League of Nations and the Office international d'hygiène publique by the constitution of the Health Organisation of the League on lines which correspond to those of the other technical services of the League.

After consideration, the following scheme was unanimously adopted :

The Health Organisation of the League of Nations consists of :

- (1) A General Advisory Health Council ;
- (2) A Standing Health Committee ;
- (3) A Health Section of the Secretariat of the League of Nations.

I. The Committee of the Office international d'hygiène publique will act as the General Advisory Health Council. The Office international d'hygiène publique will remain autonomous and retain its seat in Paris without any modification in its constitution or functions.

II. The Standing Health Committee will consist of the President of the Committee of the Office international d'hygiène publique and fifteen other members (public health experts or officers). Nine of these members will be appointed individually for three years by the Committee of the Office international d'hygiène publique in such a way that each State which is a permanent Member of the Council of the League of Nations is represented on the Standing Health Committee. The remaining six members will be appointed, also for a period of three years, by the Council of the League of Nations after consultation with the Standing Health Committee.

The Standing Health Committee may be supplemented by the addition of not more than four public health experts as assessors ; these assessors will be appointed by the Council of the League of Nations on the nomination of the Standing Health Committee and will be considered as fully effective members.

General Advisory Health Council.

I. The General Advisory Health Council will consider, discuss, advise or report on any question which may be submitted to it by the Standing Health Committee of the League of Nations.

II. It will initiate and transmit to the Standing Health Committee of the League of Nations any question which it may consider will be advanced by such a procedure.

III. The Health Section of the Secretariat of the League of Nations and the Office international d'hygiène publique will keep closely in touch. Each will communicate to the other all documents relating to its work.

A copy of each of these documents will be sent direct to every member of the Committee of the Office international d'hygiène publique and of the Standing Health Committee of the League of Nations.

IV. Supplementary expenses incurred by the Office international d'hygiène publique as the result of requests from the Council of the League of Nations will be defrayed by the General Secretariat of the League.

Standing Health Committee.

I. The Standing Health Committee will direct the health work of the League of Nations, and, in particular, it will, through a Medical Director, direct the work of the Health Section of the Secretariat.

II. It will consider and report to the Council of the League of Nations on any public health question concerning the League of Nations which may be submitted to it or initiated by the Standing Health Committee itself.

III. It has the right to appoint special committees to consider any enquiry, research or other public health matter, and it has the power to add to such special sub-committees any outside person whose qualifications it may consider will further the purpose aimed at.

IV. In order to enable the General Advisory Health Council to fulfil its duties, the Standing Health Committee will forward to the President of the Committee of the Office international d'hygiène publique a yearly report relating to the work carried out by the Health Organisation of the League of Nations during the preceding year. This report will also set out the questions with which the Standing Health Committee proposes to deal, to the extent of its competence as defined by the Council and the Assembly of the League of Nations.

Health Section of the Secretariat of the League of Nations.

The Health Section of the Secretariat of the League of Nations will form the Secretariat of the Health Organisation of the League.

It will be under the direction of the Medical Director.

The functions and duties of the Health Section will be those laid down by the Standing Health Committee subject to approval by the Secretary-General of the League of Nations.

NOTE.

In the opinion of the Special Mixed Committee, the Director of the Office international d'hygiène publique and the Medical Director of the Health Section of the League of Nations should arrange for the most suitable means to ensure the centralisation and distribution of information relating to epidemic and other diseases.

Signed on behalf of the Committee :

(Signed) ALEX. GRANVILLE.

Paris, June 2nd, 1923.

List of Members present :

Professor LÉON BERNARD (France). Professor of Hygiene in the Faculty of Medicine of the University of Paris.

Sir GEORGE BUCHANAN, C.B. (Great Britain). Senior Medical Officer of the Ministry of Health, London.

Dr. JEAN CANTACUZÈNE (Roumania). Professor of the Faculty of Medicine at Bucharest.

Dr. H. CARRIÈRE (Switzerland). Director of the Federal Public Health Service, Berne.

Dr. CHAGAS (Brazil). Director of the Oswaldo Cruz Institute, Rio de Janeiro.

Dr. CHODZKO (Poland). Minister of Public Health.

Dr. H. CUMMING (United States of America). Surgeon-General of the Public Health Services of the U.S.A.

M. J. DE CAZOTTE, Director of the Office international d'hygiène publique.

M. DE NAVAILLES (Tunis). Chef de bureau, Ministère des Affaires étrangères, Paris.

Dr. A. GRANVILLE, C.M.G., C.B.E. (Egypt). President of the Sanitary Maritime and Quarantine Board of Egypt.

Dr. N. M. JOSEPHUS JITTA (Netherlands). President of the Public Health Council of the Netherlands.

Professor RICARDO JORGE (Portugal). Director-General of Public Health, Ministry of Labour, Lisbon.

M. KUSAMA (Japan), of the Japanese Delegation to the League of Nations.

Dr. TH. MADSEN (Denmark). Director of the State Serum Institute, Copenhagen.

Dr. ALBERTO LUTRARIO (Italy). Director-General of Public Health, Ministry of the Interior, Rome.

Dr. POTTEVIN, Assistant Director of the Office international d'hygiène publique.

Dr. L. RAYNAUD (Algeria). Inspector-General, Services d'hygiène et de la Santé publique.

Dr. L. RAJCHMAN. Medical Director of the Health Section of the Secretariat of the League of Nations.

Dr. P. G. STOCK, C. B., C. B. E. (South Africa). Late Director of Medical Services, Union of South Africa.

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[Distributed to the Council,
the Members of the League and
the Delegates at the Assembly.]

LEAGUE OF NATIONS

GENEVA, September 13th, 1923.

THE WORK OF THE HEALTH ORGANISATION
OF THE LEAGUE, INCLUDING THE WORK OF THE
EPIDEMIC COMMISSION.

Report of the Second Committee to the Assembly.

(*Rapporteur* : M. ADATCI.)

Mr. President, Ladies and Gentlemen,

On behalf of the Second Committee, I have the honour to submit to the Assembly the following report on the work of the Health Organisation during the past year, together with the draft re-organisation proposed by the Mixed Committee of the Health Committee and the "Office international d'hygiène publique".

I

Of the activities of the Health Organisation, the Third Assembly took particular note (paragraph (g), first resolution) of the steps taken by the Health Organisation with regard to an interchange of the sanitary personnel of various countries, and expressed the wish to see this system made applicable to as large a number of countries as possible.

The Second Committee does not desire to dwell on the general interest of the idea of an interchange of sanitary personnel. In the Committee's opinion, it is an idea full of promise. It tends not only to propagate in the different countries the knowledge and use of the best methods of public health and disease-prevention, but also to give the personnel of health services the feeling that all are taking part, each in his own country, in a common work, the object of which is to improve the lot of humanity as a whole, and, finally, to establish direct personal relations between the sanitary administrations of the various countries. I wish in a few words to call your attention to the development of the interchange of personnel system in the course of the present year, and to point out how it has evolved in the light of the experience which has gradually been gained.

Three interchanges of medical officers of health, known as collective interchanges, were organised. The first, which lasted two months, from October to December, 1922, was organised in Belgium and Italy. Twenty-three medical officers, representing nine different countries, took part in it. The second was organised in England and lasted seven weeks, followed by five weeks' study in Austria. Some thirty medical officers, belonging to seventeen different countries, took part in this second experiment, which, like the first, ended at Geneva with a final Conference. The medical officers exchanged views on the results of their studies, and submitted extremely interesting reports, comparing the working of sanitary services in the countries visited with their own.

The essential part of the interchange consisted in a period of service of several weeks with the local sanitary administrations of the countries visited, the visitors being distributed in groups. In this manner they were able to live the life of their colleagues and to observe their daily round of duty.

The experience of these first two attempts showed that it would be well at first to confine the visit to a single country. A very full programme lasting six weeks, such as that arranged for Great Britain and Austria, resulted in the participants feeling somewhat exhausted at the end of the first part of the exchange. It was obviously necessary to arrange to extend the period several weeks. It was recognised that in future it would be indispensable to communicate to health administrations a detailed programme four to six months in advance, and, as far as possible, to forward at the same time the documents to be studied during the interchange. It is likewise

necessary to ask health services to make the nominations four to six months in advance in order to allow of direct communication with the officials chosen, so as to give each of them a clear idea of the scope and nature of the exchange. It was also recognised that a group taking part in a period of practical service should not consist of more than two or three officers.

The Committee has taken these considerations into account in organising the third collective interchange which began on September 10th, at Washington.

Twenty-four medical officers, representing eighteen European and American countries, are taking part in this interchange. These twenty-four officers will spend their period of practical service in the Sanitary Administrations of the Municipalities of the various States, and in the Federal Health Service, the whole lasting about 100 days.

Two other interchanges of a different type have been organised. Those taking part in them were specialists in malaria or in the work of Public Health Laboratories. The malaria exchange was organised in Italy, while the interchange between the personnel of the various Public Health Institutes, which have appointed their higher officials for the purpose, is taking place at the present moment.

The Assembly will doubtless recollect that it is thanks to a subsidy from the Rockefeller Foundation that the Health Committee has been able to organise this very extended liaison system, which may be regarded as a model one, between the technical health services.

For the year 1924, the Health Organisation has decided, in agreement with the Council, that four collective interchanges shall take place—one in Great Britain, a second in the Netherlands and Denmark, a third in Switzerland, and a fourth to be organised particularly for the countries of the Far East.

It has further been decided to organise two interchanges in which a limited number of specialists either in tuberculosis or in school hygiene will take part.

The Assembly will perhaps be glad to have a list of the States whose Sanitary Administrations have benefited by these interchanges up to now. They are as follows:—

Albania, Austria, Belgium, Brazil, Bulgaria, Canada, Chile, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Japan, Mexico, the Netherlands, Norway, Poland, Portugal, Roumania, Russia, the Kingdom of the Serbs, Croats and Slovenes, Spain, Salvador, Sweden, Switzerland, the United States of America and the Ukraine.

The total number of medical officers who have taken part in this system of exchanges is 108.

II.

A new type of interchange will shortly be instituted, thanks to a new grant made by the Rockefeller Foundation a few months ago. It will be used more especially for the purpose of establishing direct relations between the technical officers in charge of the services of public health statistics of their respective countries.

As my colleagues are aware, the system of health statistics is far from being uniform in the various countries, and Health Administrations have long been agreed that the initiation of a thorough and systematic study of the methods of interpreting the data regarding the course of epidemics in the various countries is greatly needed. Thanks to this new system of interchange, some twelve medical statistical experts will be able to work in the office of our Health Section at Geneva and will this year extend their investigations to a few offices of health statistics such as those in London, Berne and in the Netherlands.

The Second Committee emphasises its desires to establish still closer relations between national services and international organisations dealing with the question of public health, in accordance with the proposition made by the Delegate of Cuba, which it examined. It noted that the Council, on the proposal of the Health Committee, had taken a decision regarding the establishment of a liaison between the Health Organisation of the League of Nations and the Pan-American Sanitary Bureau. This liaison has been effected in the most simple and practical manner, thanks to the fact that Dr. Chagas (Brazil) and Dr. Cumming, Director of the United States Public Health Service and Director of the Pan-American Sanitary Bureau, attend the meetings of the Health Committee.

III.

The Health Organisation has also continued to develop its service of epidemiological intelligence, established by the vote of the Second Assembly. The Service is now publishing monthly reports, which supply official data on the course of epidemics in all countries of the world to all Public Health Services, and it is continuing to issue special reports, sometimes twice a week, as soon as it receives definite news of the outbreak of important epidemics. As was the case last year, special attention has been devoted to Russia and to Eastern Europe.

A quick intelligence service giving the course of the great epidemics is of special importance as far as the countries of the Far East are concerned. This question is connected with the problem of quarantine arrangements in the ports of the Far East, and for the purpose of investigating all these cognate questions a mission was sent to the more important ports of the Far East.

I should like to mention that this was the first mission that the League has sent to the Far East. It received a very cordial welcome from all countries, including my own.

The Service of Epidemiological Intelligence has also initiated a systematic survey of health organisation and of health statistics in all European countries. Reports of great value have been forwarded to it by the heads of the Health Services of all these countries, and the work will be extended to other nations.

IV.

There is nothing academic about this work. Certain Governments have referred to the Health Organisation for its advice on special problems. The Albanian Government called the attention of the Health Committee to the importance, both from a health and an economic point of view, of the problem of malaria in Albania. It requested the Committee to outline a plan of campaign against malaria with the object not merely of arresting but of eradicating the disease.

The Netherlands Government has requested the Health Committee to undertake an enquiry into the possibility of classifying ports according to the arrangements they possess for the medical inspection and treatment of ships.

The Netherlands Government was led to make this request because it wished to see the practice, at present in force in all Dutch ports, applied to all ports. In accordance with Dutch legislation regarding the risk of infection by ships, ships admitted on a clean bill of health to certain ports specified by the competent authorities of the Netherlands Government, are exempt from medical inspection on their arrival at other ports. The Netherlands Government considers that it would be of great advantage to international shipping if this practice could be extended as far as possible. Considering, however, that it would be difficult for it to form an opinion of the present value of the health procedure in foreign ports, the Netherlands Government believes that this enquiry could be more easily carried out by an international organisation. It believes that if the Health Organisation of the League undertook this enquiry, the Netherlands Government itself, as well as other Governments, would be prepared to grant exemption from health inspection to any vessels which had been given a clean bill of health by one of the ports specified by the technical organisation of the League of Nations.

V.

I should like to remind the Assembly that the Health Committee last year undertook work on the standardisation of sera and of serological reactions.

This work has resulted in the introduction of an international unit to express the value of anti-diphtheritic and anti-tetanic sera. Very important work in connection with other sera is at present being done. Further, with the authority of the Council, the Committee has made arrangements for the investigation of the methods of standardising certain drugs and pharmaceutical products of great importance. A special technical conference was held for this purpose in Edinburgh in July last, and research work is about to begin in a series of laboratories.

The Second Committee has expressed its wish to see this work of the Health Committee further developed. It desires to emphasise that it will lead to researches of immediate practical usefulness and give a great impetus to international co-operation between the principal institutes of medical research throughout the world.

M. Dvoracek, of the Czechoslovak Delegation, has drawn the attention of the Second Committee to the fact that it would be advisable to obtain the co-operation of the Governments in applying the results obtained by the Health Committee in the investigations on the standardisation of anti-toxic sera. As this question is very technical, the Second Committee expressed the opinion that the Health Organisation be asked to stand by the proposition of the honourable Delegate for Czechoslovakia and to present to the Council appropriate recommendations.

VI.

The Assembly is aware of the work carried out during the last three years by the Epidemic Commission. During the last eight months this Commission has undertaken a great vaccination campaign among the refugees in Greece. It has organised a service of preventive-vaccination, and three million individual vaccinations have been performed. This work was done at the request of the Greek Health Authorities, close touch being maintained with the High Commissariat for Refugees.

The Commission has also continued its work, in close connection with the Polish Health Service, for the protection of the European Health Zone established on both sides of the Russo-Polish frontier. It has also continued its epidemiological investigations and its technical collaboration with the Russian Health Services.

It is helping the Latvian Health Services to establish a maritime quarantine station at Libau.

The Assembly will, I am sure, agree with the Second Committee in recognising that both the past and the present activities of the Epidemic Commission—the rapid action which it has taken when public health has been threatened, and its work in collecting information as to the spread of epidemics—have proved remarkably successful and effective.

The Second Committee has adopted a Resolution concerning the Epidemic Commission which, in conformity with the Rules of Procedure, will be examined by the Fourth Committee before it is submitted to the Assembly.

VII.

I shall now pass on to the examination of the scheme for the Constitution of the Health Organisation of the League in the form in which it is submitted to the Assembly.

The Covenant of the League of Nations, in Article 23 (f), provides that, subject to and in accordance with the provisions of international conventions, the League shall endeavour to take steps in matters of international concern for the prevention and control of disease.

Article 24 of the Covenant further provides that there shall be placed under the direction of the League all international bureaux already established by general treaties, if the parties to such treaties consent.

In accordance with these provisions, and to help the League to fulfil the task imposed upon it by Article 23 (f) already quoted, the First Assembly expressed the intention of placing the Office international d'hygiène under the direction of the League of Nations, and drew up a general plan for an International Health Organisation, according to which it was to include :—

- (1) The Office international d'hygiène publique, which, reinforced by delegates from the countries which did not take part in the Rome Conference, was to become the General Committee.
- (2) A Technical Committee.
- (3) A Secretariat.

The unanimous agreement of the Governments could not be obtained with regard to the attachment of the Office international d'hygiène publique to the League of Nations.

In these circumstances, the Second Assembly, after noting the measures taken by the Council to carry out, as far as possible, the resolution of the First Assembly, adopted the following resolution :—

“ The Health Organisation of the League of Nations shall provisionally comprise a Health Committee. The Secretariat of this Organisation shall be appointed by the Secretary-General of the League, and be responsible to him, and shall be placed under a Medical Director.”

The Provisional Health Committee set up by the Council was therefore approved by the Assembly.

The Third Assembly expressed the opinion that the Health Organisation of the League of Nations met a permanent need, and that it was essential that it should continue its work.

The Assembly further decided that a scheme should be drawn up, before the meeting of the Fourth Assembly, on the basis laid down and in accordance with the principles approved by the First Assembly for the technical organisations of the League, for the constitution of a permanent Health Organisation, and that the scheme should then be submitted for approval to the Fourth Assembly.

This organisation was to be entrusted with the duties defined by the First and Second Assemblies.

In consequence of this decision, the Council of the League of Nations decided on January 30th, 1923, to constitute a special Mixed Committee composed of an equal number of members of the Health Committee of the League and of the Office international d'hygiène publique. The duty of the Committee was to prepare a scheme for the constitution of the Permanent Health Organisation.

The resolution of the Council having been accepted by the Committee of the Office international d'hygiène, the special Mixed Committee met in Paris last May.

This Committee drew up a scheme of organisation which has been favourably considered by the Council of the League of Nations, and is at the present moment being examined by the Assembly.

Being anxious to avoid the overlapping which might result from the existence of two separate organisations, the Mixed Committee considered it desirable to establish a close connection between the Health Service of the League of Nations and the Office international d'hygiène publique by establishing the Health Organisation on a similar basis to that of the other technical services of the League.

In accordance with this principle, the proposed Health Organisation is to include :—

- (1) An Advisory Council ;
- (2) A Health Committee ;
- (3) A Health Section, forming part of the Secretariat of the League of Nations.

The work of the Advisory Council will be entrusted to the Committee of the Office international d'hygiène publique.

The Health Committee is to be composed of sixteen members, namely, the Chairman of the Committee of the Office, nine members chosen by that Committee, and six members appointed by the Council of the League of Nations, after consultation with the Health Committee.* It

* As the new Health Committee will not yet be in existence, the Second Committee believes that the Council should consult the Chairman of the Provisional Health Committee before making the first appointments.

is further suggested that the Council should, if necessary, appoint four extra Health Assessors, who would be regarded as active members of the Committee. The Second Committee considers that these assessors should be appointed for a period of three years in the same way as the other members of the Committee.

The Health Section of the Secretariat of the League of Nations will continue to be administered in accordance with the regulations governing the organisations of the League of Nations. (see Resolution of the First Assembly of December 9th, 1920).

All steps have been taken to establish close and profitable relations both between the Advisory Council and the Health Committee, and between the Office international and the Health Section of the League; the two organisations will keep in touch with each other and will forward to the Members of the Council and of the Committee all documents relating to their work.

The Committee of the Office international d'hygiène publique will retain all its powers and will become the Advisory Council of the League of Nations. Its duty will be to consider and discuss any questions which the Health Committee of the League may think fit to submit to it, either on its own initiative or at the request of the Council.

The importance of the opinions and resolutions of the Committee of the Office is enhanced by the fact that it is composed of delegates of all the participating States.

The Committee, which has a large number of members and meets only twice a year, has not always the resources which are indispensable for any exhaustive and practical study of the questions submitted to it. It has, therefore, been provided that the Committee may entrust the preparation of its work to the Health Committee of the League of Nations if it considers that this procedure is likely to assist its investigations. The Health Committee is a less scattered body and has greater elasticity. It may, if occasion arises, carry out enquiries, appoint special sub-committees, and attach to them any qualified persons whose assistance it desires.

The Health Committee of the League of Nations will thus be responsible for the preliminary work on which the Advisory Council's investigations will be based. The Health Committee will also hold itself at the disposal of the Council of the League of Nations to consider all questions which fall within its competence and the solution of which would not appear to require any action on the part of the Advisory Council or would be more quickly secured without such action.

Lastly, the Health Committee will direct the work of the Health Section of the Secretariat of the League of Nations. This Section, which is under the Medical Director and which will act as the Secretariat of the Health Organisation, forms part of the machinery of the Secretariat of the League of Nations.

The powers and duties of the Health Section will be determined by the Health Committee and submitted for the approval of the Secretary-General of the League.

Such are the proposals of the Mixed Committee with regard to the Health Organisation of the League of Nations. They will not involve any increase in expenditure of the League. There is no reason to anticipate the convening of any special sessions of the Office for the consideration of the questions which may be submitted to it by the Council or the Assembly of the League.

The Assembly has therefore every guarantee as regards financial matters.

It need hardly be stated that the Committee and the Health Section will be established in the same place as the League of Nations. The Office international d'hygiène publique will remain in Paris, as provided in the Rome Agreement of 1907.

The Assembly will wish to associate itself with Viscount Ishii, the Rapporteur to the Council, in congratulating the Mixed Committee on the great thoroughness which it has displayed in solving the problem put before it. Taking into account the experience gained by the other League Committees, it has given our Health Committee all the elasticity that it ought to have, and in particular it has made provision—with the Council's approval, of course—for the formation of sub-committees, the consultation of experts, etc. It has specifically provided that the Health Committee's work is to be confined within the limits of its competence, as laid down by the Council and the Assembly of the League. It is therefore clear that the Council will be asked for its approval in all cases.

The Health Committee, thus constructed, will direct the Health Work of the League of Nations. Its executive organ, the Health Section of the Secretariat, will remain under the Secretary-General's orders and be responsible to him, but in technical matters it will follow the guiding principles laid down for it by the Health Committee (see Resolution of the First Assembly of December 9th, 1920).

The Second Committee accepted, with the greatest possible satisfaction, the scheme of the Mixed Committee for the constitution of the Health Organisation of the League. The Committee would like to emphasise that the intimate association created by this agreement between the Organisation of the League of Nations and the Office International will lead to a simplification of the work and consequently a diminution of the charges which the League has assumed in order to carry out the obligations imposed on it by Article 23 (f) of the Covenant.

The Committee considers that the Health Section of the Secretariat should confine itself to doing the work prescribed by the preceding Assemblies, as has been done hitherto. The work of the Health Committee and of the Health Section should be in the future the same as it has been in the past, namely, to give the Council advice, when called upon to do so, to carry out the programme drawn up by the Advisory Council for its guidance; to

execute any mandate given to it by the Council or by the Assembly of the League ; to take all emergency measures which may be asked by any Member of the League, on the application of the Governments concerned ; and, finally, to act as organ of mediation and interpretation with regard to agreements.

The Second Committee considers it advisable that the agreement between the Office and the Health Services of the League, which it regards as transitional, should develop in the direction of unification.

It might be useful, perhaps, to consider whether the Advisory Council could act in the place of conferences for the conclusion or revision of certain conventions. In this way, appreciable economies would be effected, and overlapping with international conferences avoided. These conferences, however, may have a more general constitution and at times more specific duties.

The Second Committee has examined certain suggestions which were put forward by several of its members.

M. Ador requested that the members of the Health Committee be appointed as representatives of their respective Governments and not in their private capacity.

The delegates to the Office international took part in the meetings as representatives of their Governments, and it seemed reasonable that the Health Committee—constituted as suggested—should include among its members both heads of administrative services, dependent as such on their own Governments, and representatives of the medical profession who had specialised in public health and preventive medicine. The method of election proposed by the Mixed Committee would obviously lead to the inclusion in the Health Committee of representatives from both these categories.

The Second Committee was entirely in agreement with M. Ador's desire that the work of the International Health Organisation of the League of Nations, even when at a preparatory stage of enquiry and investigation, should be carried on in the closest possible co-operation with the Governments. The Committee considers, however, that co-operation between the Health Committee and the Governments would in practice be realised without difficulty ; most of the members would be selected from the Office international, sitting on the Committee as experts, and attending the Office international as representatives of their Governments. The Committee would certainly include a high proportion of officials from the Public Health Departments. Otherwise there would be a risk that the decisions of a Committee consisting of Government representatives might be influenced by considerations other than those of a scientific or technical character.

Moreover, it is difficult to see how the Advisory Council could nominate nine members of the Committee and the League another six to represent their Governments ; such nominations are clearly the prerogative of Governments themselves.

It was suggested in M. Avramovitch's proposal that in the choice of members of the Health Committee, both as regards members to be elected by the Office international and those to be appointed by the Council, due weight should be given to the importance the various Governments attach to health questions and also to geographical representation. It would probably be enough to draw the attention of the Organisation and of the Council to the fact that they would be justified in entrusting this matter to an international body of experts, such as the Committee of the Organisation.

M. Zumeta reminded the Second Committee that the Venezuelan Delegation had made the following statement to the Third Assembly :

“ The Venezuelan Delegation is of the opinion that the advisory and technical duties of the Provisional Health Committee and of the Permanent Health Organisation should be more clearly defined, in order that, except in urgent cases and with the approval of the Council of the League of Nations, these Technical Organisations may not proceed to take any steps except such as are in conformity with a plan previously submitted for approval to the Assembly.”

He was reminded that M. Rivas-Vicuña, the Chilean Delegate and Rapporteur of the Second Committee of the Third Assembly, had drawn attention to the fact that the Resolution adopted by the Second Assembly, on the basis of which the plan then under discussion had been drawn up, and had stated explicitly that the Permanent Health Organisation should be established “ on the basis of, and in conformity with, the principles adopted by the First Assembly for the Technical Organisations of the League,” and that this organisation “ should be entrusted with duties defined by the First and Second Assemblies.”

The Venezuelan Delegation was satisfied with this statement.

The Second Committee considered that the draft constitution for the Health Organisation drawn up by the Mixed Committee was not in any respect incompatible with the Resolution of the Third Assembly, and assumed that the Health Organisation in its new form would still be controlled throughout by the Council and the Assembly. (See Resolution of the First Assembly of December 9th, 1920, on the relations of the Technical Organisations of the League with the Council and the Assembly.)

Jonkheer van Eysinga and M. Avramovitch suggested to the Second Committee that it would be advisable in future to adopt the title of “ Health Organisation ” instead of “ Permanent Health Organisation”, and “ Advisory Health Council ” instead of “ General Advisory Health Council”.

The honourable Delegate of the Netherlands has further asked that the annual report which the Health Committee will present to the Advisory Health Council should also be submitted to the Assembly.

The Second Committee notes that it would be advisable that the agreement to be concluded between the League of Nations and the Office international d'hygiène publique should be terminable at twelve months' notice.

The Second Committee fully endorses these suggestions.

On behalf of the Second Committee, I have the honour to submit to the Assembly the following Resolutions :

I.

" The Assembly endorses without reserve the conclusions contained in the report which has been presented to it by the Second Committee, signifying approval both of the work of the Health Organisation of the League of Nations during the past year and of its plans for the future.

" The Assembly approves the decision of the Council to authorise the Health Committee to examine the Dutch proposal regarding free *pratique* to ships, as well as the proposal of the Second Committee to submit to the Health Committee the study of the means by which the results of the investigation on the standardisation of sera can be utilised by the Governments. In conformity with the desire expressed by the last Assembly, the Health Committee will consult, if necessary, the other Technical Organisations of the League, and will submit to the Council the results of its deliberations."

2.

" The Assembly, realising that the establishment of a single international health organisation, much as it is to be desired, is not attainable in present circumstances, considers that, in the treatment of health questions, it is important to avoid the uncertainty and confusion to which the existence of two distinct organisations may give rise, and consequently that it is advisable to establish close relations between the Health Services of the League of Nations and the Office international d'hygiène publique by the constitution of the Health Organisation of the League on lines which correspond to those of the other technical services of the League,

" Having considered the Resolution adopted by the Third Assembly on September 15th, 1922, ' that it may be possible, before the meeting of the Fourth Assembly, to prepare, on the basis and according to the principles adopted by the First Assembly for the Technical Organisations of the League, the Constitution of a Health Organisation which will be submitted to the Fourth Assembly for approval, this Organisation will undertake the duties laid down in the resolutions of the First and Second Assemblies ';

" And having considered the report of the Special Mixed Commission of the Office international d'hygiène publique and the Health Committee of the League of Nations, and in view of the fact that the Council has approved the scheme of the Health Organisation and decided that it be submitted for examination to the Assembly :

" Decides to approve the scheme submitted by the Mixed Commission for the Health Organisation of the League of Nations, and asks the Council to take all necessary steps to make this agreement effective ;

" Calls the attention of the Council to the views expressed in the report of the Second Committee to the Fourth Assembly."

SUPPLEMENTARY NOTE TO THE REPORT OF THE SECOND COMMITTEE ON THE
WORK OF THE HEALTH ORGANISATION.

Presented to the Assembly by the Rapporteur, M. ADATCI.

The Second Committee has examined a motion put forward by Sir Neville Howse, the honourable Delegate for Australia, in which it is proposed that the reports presented to the Permanent Mandates Commission by the mandatory Powers should be presented to the Health Committee of the League for any comments which it may desire to make after studying the chapters of the reports dealing with questions of public health.

The Second Committee, desirous of seeing intimate relations established between the special Technical Organisations of the League, has decided to submit to the Assembly the following Resolution, which I have the honour to present :

" The Assembly considers that all the health reports presented to the Permanent Mandates Commission should be submitted to the Health Committee of the League of Nations for any recommendations it desires to make."

C. 825. M. 314. 1923.

C. H. 141.

LEAGUE OF NATIONS.

Health Organisation.

PUBLIC HEALTH SERVICES
IN
AUSTRIA.

By

Regierungsrat Dr. HERMANN SCHROETTER.

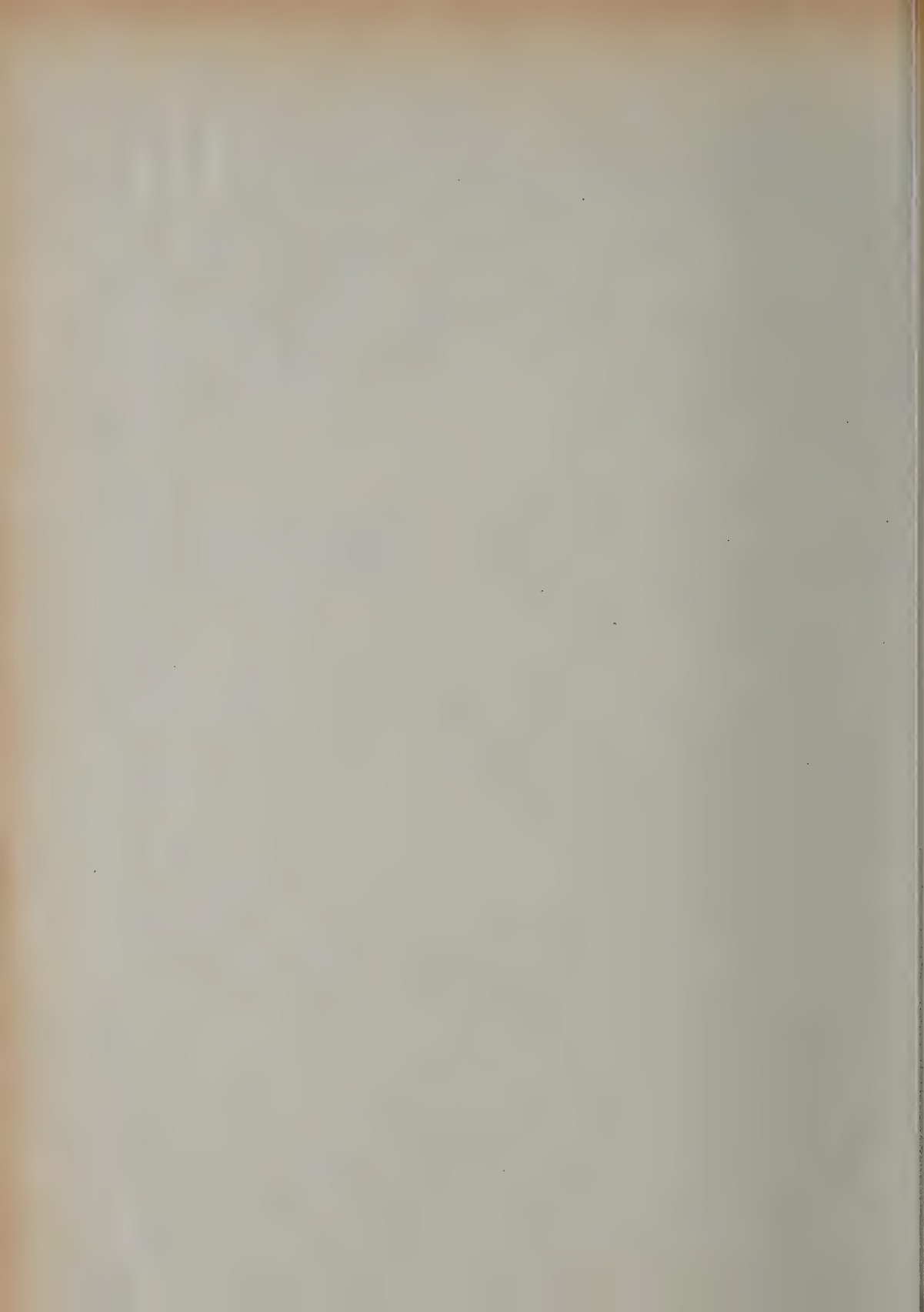


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THE AUSTRIAN HEALTH ADMINISTRATION

WITH PARTICULAR REFERENCE TO SPECIFIED QUESTIONS.

Compiled at the Invitation of the Health Organisation of the League
of Nations from Official Sources

By Dr. HERMANN SCHROETTER.

INTRODUCTION.

The present statement will, it is hoped, answer all the questions contained in the Note of April 16th, 1923, though perhaps in greater detail than was at first contemplated. In drawing up this report, however, the sequence of questions was not always strictly adhered to; the material was grouped in what we believe to be a more uniform and perhaps more logical manner, and it was hoped thereby to facilitate a general survey of the questions dealt with. As will be seen from the titles of the various sections and chapters, we have endeavoured to keep to the form indicated in the questionnaire, especially as regards the essential points detailed therein. It has been our aim to set out the data required in as lucid a way as possible, so as to make easy comparison with the health legislation of other countries.

We might add that the health legislation of Austria is based on a cultural development spread over centuries and that it meets with all requirements of modern hygiene and provides for all the administrative measures necessary to enforce it.

Once the material regarding the health legislation of all the countries Members of the League of Nations and also of Germany has been laid before the Health Organisation in a concise and comprehensive form, the latter will have a broad basis on which to work for the internationalisation of the health administration of the world and will be in a position to evolve certain standards — regarding statistics, infectious diseases, relief organisations, the standardisation of biological products (sera) and poisons, as well as the training of State health personnel, etc. — which will be of incalculable value for the health of the peoples and their mutual co-operation in health matters.

The author of this report would be happy if he could feel that he had contributed ever so slightly to the attainment of this ideal.

I. PRELIMINARY STATEMENT REGARDING THE DEVELOPMENT OF THE AUSTRIAN HEALTH ORGANISATION.

The "Republic of Austria", which was proclaimed on November 12th, 1918, after the break-up of the "Austro-Hungarian Monarchy," at present comprises, in accordance with the Treaty of St. Germain, an area of 83,770 square kilometres with a population of 6,535,385 inhabitants (census of March 7th, 1923).

The area of the former Austrian territory in the Dual Monarchy, that is to say "of the Kingdoms and Provinces represented in the Parliament," was 300,004 square kilometres with a population of 28,571,934 inhabitants (census of December 31st 1910). The legislative body for this area was the Parliament (Upper and Lower Houses); the special interests of the provinces were represented by the Provincial Diets. According to the Law of December 21st, 1867, which was the fundamental law regarding Imperial representation, the competence of the Parliament included health legislation as well as legislation for the prevention of epidemics and epizootic diseases.

There was a special department in the Ministry for Internal Affairs to deal with the health affairs of the Empire. The principal Board of Health acted as its technical and scientific adviser.

The duties of the Ministry of the Interior came within the sphere of political administration. Each Crown land was governed by a governor or a president. Each Government or provincial administration had provincial health officers and provincial veterinary surgeons attached to it to deal with the health administration of the provinces, and the provincial Board of Health acted as scientific and technical adviser. Each province was divided into political administrative districts — "Bezirkshauptmannschaften" — with a District Commissioner as the chief authority, to which a divisional medical officer and a divisional veterinary surgeon were attached.

Towns which possessed a separate statute and whose Mayors conducted the political administration instead of the District Commissioner, with the municipal council as their executive organ, had attached to them as scientific and technical expert a municipal health officer (Stadtphysikus) or office, while in all other towns and communes under the District Commissionerships (boroughs and villages) the administrative organ and scientific expert were represented by the communal medical officer (Gemeindearzt), or by a district medical officer in charge of several communes (Distriktsarzt).

This organisation of the health service was maintained in its essentials also in the Republic of Austria, and all the laws and regulations regarding these matters which were in force in the former Monarchy are still fully in force in so far as they have not been rescinded or supplemented; with this difference, that the Crown lands have

been replaced by provinces (Vienna, Lower Austria, Upper Austria, Salzburg, Styria, Carinthia, Tyrol, Vorarlberg and the Burgenland, which formerly belonged to the Kingdom of Hungary). These provinces comprise 113 administrative districts, with 16,973 boroughs, townships and villages. There are Commissioners at the head of each of these districts on whom the rights and the duties of the former Provincial Governors now devolve. The Republic's representative body is the National or Federal Council, and each province has its Diet. The Health Department in the Ministry for Internal Affairs has been abolished, and a special section of the Federal Ministry for social administration, the "Public Health Office", is now the highest authority in health matters. This office is responsible for the entire public health administration, having worked as an independent Government Department for public health until March 1919. The Decree of the collective Ministry, dated August 8th, 1918 (Imperial Legal Gazette, No. 297), which had been promulgated by the Ministry of Public Health of that time, determines the competence of the Office of Public Health. Only affairs connected with the education, instruction and care of deaf-mutes and blind children were removed from its jurisdiction and placed under that of the Federal Ministry for Internal Affairs and Education. The old organisation, comprising a principal Board of Health, provincial Boards of Health, District Commissionerships (Bezirkshauptmannschaften), divisional medical officers, municipal medical officers, communal and district medical officers, has been maintained.

II. PRINCIPLES OF THE AUSTRIAN MEDICAL ORGANISATION (Legislation).

Some of the earliest of the legal provisions dealing with matters of public health — of which many are still in force — are the regulations and decrees promulgated in the reign of the Empress Maria Theresa. In this connection we may quote the Imperial patent of January 2nd, 1770, called the "General Health Regulations for all Royal and Imperial Hereditary Dominions." These regulations lay down in several chapters the fundamental principles for the organisation of public health and contain detailed rules for the conduct of the health personnel, especially of doctors and midwives. A supplementary patent, dated April 10th, 1773, lays down further rules and regulations for the administration of public health.

A whole series of other decrees, issued by Government authorities during the second half of the eighteenth and the beginning of the nineteenth centuries, deal with matters of public health. The "Plague Patent" of May 21st, 1805, which contains detailed regulations regarding notification, isolation, quarantine and disinfection, and provides for severe penalties in cases of infringement, may be quoted in this connection as being specially noteworthy in view of its early date.

The law of April 20th, 1870 (Imperial Legal Gazette, No. 68 of the "Imperial Public Health Law"), forms one of the turning-points in the development of the State health organisation and still forms the main basis of the organisation of the public health services. This law was amended and supplemented by the laws of November

24th, 1876 (Imperial Legal Gazette, No. 137), of January 5th, 1896 (Imperial Legal Gazette, No. 17), and of September 27th, 1901 (Imperial Legal Gazette, No. 148).

This Imperial law, in its amended form, embodies nearly all the ministerial decrees, provincial laws, regulations issued by the provincial Governments and the instructions issued by District Commissioners, municipalities and the communal authorities, and governs the administration of all public health matters in the Republic of Austria.

In accordance with this law the supreme control over the whole health organisation and the direction of all medical affairs are entrusted to the Government. The latter exercises its authority either directly through its own executive organs or indirectly through the subordinate authorities in the provincial administrations. In accordance with this principle, the work of health administration is performed by the State, and partly also by the provinces and communes.

The Government is responsible in the first place:

- (a) for the records of the whole health personnel, its supervision from the medical point of view as well as the application of the laws regarding the duties of this personnel;
- (b) for the supervision of all hospitals, lunatic asylums, lying-in hospitals, foundling hospitals and infant asylums; of vaccination establishments, infirmaries and other similar institutions; and of mineral water springs and spas. It is also responsible for granting the necessary permission for establishing private institutions of this kind;
- (c) for the application of the laws regarding infectious diseases, endemic diseases, epidemics and epizootic diseases, quarantine, cattle pounds and the traffic in drugs and poisons;
- (d) for the supervision of vaccination;
- (e) for the regulation and supervision of all pharmaceutical matters;
- (f) for ordering and enforcing the execution of *post-mortem* examinations required in connection with health control;
- (g) for the compulsory inspection of the dead and the application of the laws regarding burials, places of burial, exhumation and transport of corpses, and the supervision of knackers' yards and flayers' pits.

This law lays the principal responsibility for the public health services on the communes, whose activities in these matters are prescribed by provincial legislation. The latter may be considered to have regulated this service in a uniform manner on the lines laid down by Imperial legislation.

The special (*i.e.*, independent) activities of the communes in matters of public health therefore comprise:

- (a) the application of health regulations as regards streets, roads, public squares and fields, public meeting-places, dwelling-houses, drains, flowing and stagnant water, the drinking-water supply and water for general purposes, foodstuffs and receptacles, and finally public baths;
- (b) the provision of necessary assistance in case of illness or confinement, and means of saving life in cases of emergency;
- (c) keeping records of foundlings, deaf and dumb persons, lunatics and idiots who are not placed in public institutions, as well as superintending the care of such persons;
- (d) the establishment, upkeep and supervision of mortuaries and burial grounds;
- (e) supervising the application of health regulations in connection with cattle fairs; and
- (f) the establishment and upkeep of knackers' yards.

The communes are further responsible for seeing that the competent authorities carry out :

- (a) the local measures for the prevention of infectious diseases and of epidemics;
- (b) the application of the police regulations regarding health matters and burials;
- (c) inspection of the dead;
- (d) communes must further lend assistance in all measures carried out under the health regulations by the Government authorities, in particular, in connection with inquests and commissions, public vaccination, exhumations and *post-mortem* examinations, and the prevention of epizootic diseases;
- (e) supervision of private nursing homes and lying-in hospitals;
- (f) supervision of knackers' yards and flayers' pits;
- (g) the drawing-up of periodical health reports to be submitted to the Government authorities.

The communes carry out these duties through the duly authorised municipal (towns) or district medical officers.

The health administration of the country, like its political administration, is carried out by authorities, which might be classed as authorities of the first, second and third grade, the highest of these (the IIIrd) being the Office of Public Health. Authorities of the first grade are the District Commissionerships (*Bezirkshauptmannschaften*), or, in the case of towns possessing their own statute, the municipal

council (the municipal medical officers). Authorities of the IInd grade are the provincial Government authorities who, for the executive work in connection with public health, have at their disposal a special health department composed of doctors, under the direction of a health expert. Similarly, a departmental medical officer (or several medical officers) is attached to the political authorities of the Ist grade. In the higher grades the control service and executive powers are combined.

The City of Vienna, however, constitutes an exception. Since Vienna possesses at the same time the status of a Federal province, the duties of the indirect Federal authorities of the Ist and IInd grades are in the hands of a single authority — the Municipal Council of the City of Vienna.

The competence of the highest health authority, *i.e.*, the Office of Public Health in the Federal Ministry for Social Affairs, extends not only to all questions of medical administration in the narrower sense, but also to the control of foodstuffs and the veterinary service, in so far as the latter deals with animal diseases dangerous to man.

The Ministry for Social Affairs, being a political authority of the IIIrd or highest grade, combines executive powers with the duties of supervising and giving expert opinions through its Department of Public Health, which is the central authority in all health matters.

At the present time the Office of Public Health consists of the four following departments:

Department No. 1 (General Health Administration) dealing with matters affecting the professional standing and general position of medical men, the training and further education of medical officers, the organisation of public health under the Federal authorities, matters relating to the Decorations Fund of the Red Cross, the Office of the Supreme Board of Health, and also with the public health aspects of social and private insurance, with industrial hygiene, curative treatment for wa-
cripples, public health statistics, health propaganda, the library and the editorial work of the "Mitteilungen des Volksgesundheitsamtes" (Bulletin of the National Public Health Office), social-hygienic museum and archives. Matters affecting the staff of the Office of Public Health are dealt with in the *Präsidium* department of the Ministry for Social Affairs, to which two medical officials of the Office of Public Health are specially attached for the purpose.

Department No. 2 (measures for the maintenance of public health) dealing with chemists and druggists, the trade in medicines, wound-dressings and poisons, matter affecting the status of chemists and druggists, professional training of chemists, the Institute of Chemico-Pharmaceutical Research, health resorts and medicinal springs; technical inspection of medicinal springs; dental technology, prophylaxis against and prevention of infectious diseases; bacteriological diagnosis institutes, National Institute of Serotherapy, Institute for the Manufacture of Vaccines, Institute for Inoculation against Hydrophobia; training and employment of qualified female assistants in such institutions; the campaign against tuberculosis, sanatoria, etc., Austrian Tuberculosis Fund; the campaign against sexual diseases and alcoholism; measures for the improvement of public health (especially in regard to water supply and drainage).

transport and domestic and prison hygiene, burials, etc.; veterinary questions, in so far as they relate to diseases of animals which can be communicated to human beings; hygiene of nutrition, trade in special foods and cosmetics, supervision of the traffic in foodstuffs, including the inspection of cattle and meat, food inspection centres, verification of diplomas; training of market inspectors (Marktkommissärkurse), *Codex alimentarius austriacus*.

Department No. 3 (curative treatment and general care) dealing with sanatoria and hospitals, the general control of hospitals administered by the State, schools for training nurses and sick-room attendants; sanatoria for war cripples; administration of stores of sanitary material; Red Cross and life saving, first-aid arrangements; medical care of mothers, infants and young children; midwives; school hygiene; home and foreign children's relief societies; headquarters of the "Kinder in's Ausland"; bureau for apprentices' relief organisations and headquarters of the Committee for apprentices' convalescent homes; physical training and gymnastics.

Department No. 4 (under a trained lawyer) deals with the legal aspects of public health questions, legal matters appertaining to the traffic in foodstuffs, institutions where foodstuffs are examined and the other institutions which are directly under the Office of Public Health, legal and administrative matters concerning the Office of Public Health; criminal matters and lunacy questions from the legal point of view.

Moreover, a medical official of the Federal Ministry of War serves as a representative of that Ministry on the Office of Public Health in the Ministry for Social Affairs.

The number of officials in the Office of Public Health with a university training numbered 43 in 1922, and of these 32 were doctors. The Health Office also had the services of accountants and Government clerks from the staff of the Ministry for Social Affairs.

Expenditure on staff amounted to about 415 million crowns, while the establishment and general expenditure of the national public health administration amounted to 115 million crowns in round numbers.

The procedure prescribed in the Sanitary Administrative Department in connection with sanitary legislation is that the central office, either on its own initiative or as a result of special circumstances which are also of general interest and importance, should issue circular decrees to all the provincial offices, which in their turn should transmit the instructions for action to the district authorities subordinate to them. The same order of procedure is observed in the case of separate instructions, appeal decisions, etc.

If any matter calls for special legislative action, it can be dealt with by ministerial decrees or by special laws, which, if necessary, must receive the assent of any other Ministries which may be concerned, or must be dealt with in accordance with constitutional practice by the National and Federal Council.

The Office of Public Health has no laboratories of its own for scientific research.

Health statistics for Austria are centralised in a department of the Office of Public Health — to which also a portion of the raw statistical material is submitted direct — under the control of a medical expert. Since the re-organisation of the Ministry of

Public Health (August 19th, 1918), of which the present Office of Public Health is the direct successor, the official health statistics — which cover a wider field than the so-called public health statistics — have been dealt with by that office, whereas health statistics formerly — as, in point of fact, is still partly the case — were dealt with by the Central Statistical Commission as being a national office affiliated to the Ministry of Education. The Office of Public Health obtains its statistical material from two sources, either direct from the authorities or the organisations submitting the reports (such as hospitals, lunatic asylums, sickness insurance funds, etc., on forms provided as a rule for the purpose) or else indirectly through the political authorities, the district medical officer or the provincial Government (returns as to the movement of population, causes of death, inoculation reports — also submitted for the most part on specially prescribed forms), so that the material may be dealt with as the available resources permit. As has already been pointed out, only the most important tabulations can be effected, while any idea of more extensive treatment of the data, such as would be highly valuable especially in the case of racial hygiene and other specialised medical questions, must for the present be abandoned. In any case, we are once more compelled to recognise that the organisations furnishing the statistical raw material cannot be expected to answer questions of too complicated a character, and that the carrying out of special investigations will always be possible only to a limited extent and will be conditional upon the co-operation of those specially interested.

I may mention here that, under a decree of the Office of Public Health, dated July 5th, 1923, an investigation on a large scale was instituted into the spread of goitre among growing school-children, an investigation which is accompanied by extensive prophylactic treatment (common salt containing iodine) against this disease in the Austrian Federal Provinces.

The veterinary service in the narrower acceptance of the term is incorporated in the Ministry of Agriculture and Forestry and the relevant statistics are forwarded to that Office.

The Imperial Public Health Law established the Central Board of Health, which consists almost entirely of doctors possessing the highest scientific qualifications, and assists the higher authorities in the public health administration as an advisory and expert organisation. A similar duty was performed in the past by the Permanent Medical Commission. The Central Board of Health consists of ordinary and extraordinary members. The latter are called in from time to time as specialists and experts. Ordinary members are not paid; their term of office is three years and the members have the right to the title of "Public Health Councillor." The method of transacting business in the Central Board of Health is laid down in a special body of instructions. Ordinary and extraordinary members resident outside Vienna are entitled to allowances to cover their travelling expenses.

The chief public health official of the State is entrusted by the District Commissioner with the duty of supervising the manner in which the appropriate organisations apply the sanitary laws and ordinances; he must make journeys of inspection at regular intervals and as occasion may require. He is further responsible for dealing with the

documents of the provincial authorities which relate to sanitary matters, and co-operates with any sanitary commissions that may be set up. The chief sanitary officials in each province are assisted by either one or two State sanitary inspectors.

The Imperial Public Health Law further instituted provincial Boards of Health, which serve in each province as the advisory and expert organisations for such duties connected with the public health as devolve upon the District Commissioner. These boards consist of the chief sanitary officials of the provinces, of from three to six ordinary members appointed by the Federal Government for a period of three years, and also of extraordinary members who are called in as occasion may require. The members of a provincial Board of Health receive no remuneration for their services.

The medical officials of the political authority of the first grade, or the municipal medical officers as the case may be, are accordingly responsible for supervising the enforcement, within their respective districts, of existing provisions in regard to sanitary administration. These officers must from time to time — and whenever necessary — make journeys through their districts for the purpose mentioned above. They have, moreover, to give direct assistance in connection with sanitary matters for which the district or the town is responsible, and must also give their advice on legal points. On the outbreak of epidemics, they must immediately take any necessary measures on their own responsibility if the situation appears dangerous. In accordance with the inter-State agreements, which have been entered into since the meeting of the International Sanitary Conference — agreements which will now possess special authority as a result of the conclusion of sanitary conventions between the various countries — they are further empowered to cross the frontiers of the country necessary, and to enforce urgent measures in agreement with the frontier authorities of any other country concerned.

Seeing that the National Sanitary Department forms a branch of the political administration and holds a place among the organisations — under the control of officials conversant with legal matters — which have been set up for carrying on the work of that administration, the medical officials are also subordinate in purely sanitary matters to the non-medical heads of these organisations. In the event of an order to which they take exception being given by their official superiors, no legal guarantee is provided that the views of the medical officials will prevail. As a matter of fact, however, no disputes have arisen.

In conclusion, attention may be drawn to the fact, which may also possess some historical interest in connection with the former Austro-Hungarian Monarchy, that, as a result of the decision of the Austrian State Council, dated November 7th, 1918, the duties of the Army Health Service were transferred to the Office of Public Health, under the following conditions:

1. The duties of the 14th Department of the Ministry for War and the army medical duties of the Ministry for National Defence shall, provided they relate to German-Austrian affairs, be transferred, on the winding-up of these organisations, to the Office of Public Health.

2. The Office of Public Health shall forthwith be entrusted with full powers over all German-Austrian Army health institutions, sanitary material, and the staff connected therewith. In addition, the National Office shall take over the Army Sanitary Committee with its two laboratories.

3. The institutions and the staff of the Austrian Red Cross Society shall also, in so far as they are under the authority of the 14th Department of the Ministry of War and the Ministry for National Defence, be placed under the Office of Public Health.

4. With a view to discharging these duties, the Office of Public Health shall take over a number of Army doctors and the requisite auxiliary staff from the Ministry of War and the Ministry for National Defence.

5. The Office of Public Health is hereby enjoined to maintain friendly relations with the National Office for the Army in all military matters.

Special mention should also be made of the fact that the present army administration has no hospitals of its own, but merely possesses rest-rooms, and accordingly sick soldiers must receive treatment in civilian hospitals.

III. HEALTH PERSONNEL.

1. MEDICAL STAFF.

Only doctors who have graduated in all branches of medicine at an Austrian University and who are at the same time entitled to Austrian nationality may, under normal circumstances, practise medicine in Austria. They must report to the authorities before taking up a practice. In exceptional cases, foreign doctors are permitted to practise in Austria — in accordance with the principle of reciprocity or by virtue of special concessions valid for a limited period of time or subject to other conditions.

The professional training of doctors is regulated by the order regarding examinations (*Rigorosa*) for the Medical Faculty (Ministerial Decree of April 14th, 1903, Imperial Legal Gazette, No. 102). This order lays down that, to obtain a doctor's degree in all branches of medicine, the candidate must regularly keep at least ten terms of six months each as an ordinary student in a medical school, and must pass three severe examinations (the so-called *Rigorosa*). A student is only regarded as having kept a six-months' term provided he has had not fewer than twenty hours' instruction for an hour each week (not including the regular courses) at a training college with a half-yearly term.

The examination subjects at the first *Rigorousum* are: general biology, medical physics, medical chemistry, anatomy, histology, physiology.

At the second *Rigorousum*: pathological anatomy and histology, general and experimental pathology, pharmacology and the science of prescribing and dispensing, internal medicine, pediatrics, psychiatry and neuro-pathology.

At the third *Rigorousum*: surgery, midwifery and gynaecology, ophthalmology, dermatology and syphilidology, hygiene and medical jurisprudence.

All three *Rigorosa* must as a rule be passed at the same university.

In addition to the severe examinations (*Rigorosa*), students must pass separate examinations, which, in the majority of cases, must be both theoretical and practical, in special subjects chosen from the general examination list, and must, moreover, produce evidence to show that they have had practical experience at clinics under the supervision of the head surgeon or doctor of the same or of his deputy, and that they have attended certain special courses and have had some practical experience.

The total number of medical men (graduated doctors trained in all branches of medicine) practising in Austria at the end of 1920 amounted to 7054, divided as follows amongst the various provinces: Burgenland, 71; Carinthia, 173; Lower Austria, 106; Upper Austria, 467; Salzburg, 158; Styria, 785, Tyrol, 315; Vorarlberg, 88; Vienna, 4,191; Austria is, accordingly, provided with an excessive number of doctors in proportion to her population; for instance, as regards the towns, there is a doctor for every 293 inhabitants at Innsbruck, 385 at Graz, 439 at Vienna, 493 at Klagenfurt, 503 at Salzburg and 759 at Linz. The result is that for 5,100 doctors in round numbers (*i.e.*, 73 %) there is on an average one doctor to every 444 inhabitants, while only in the case of 13 % of the doctors is the number of inhabitants to each doctor 2,000 and in the case of a further 13 % 3,000. Nevertheless, the number of doctors in Austria is steadily increasing, and this is also true of doctors of foreign origin settled in Austria, who have acquired Austrian citizenship either during their period of study or immediately afterwards.

In order to obtain a permanent post as doctor in the Public Sanitary Service under the political authorities, proof must be given of special training, this being afforded by the passing of a special examination (District Health Officers' — *Physikat* — Examination). Specific provisions regarding this examination are contained in the Ministerial Decree of March 21st, 1873 (Imperial Legal Gazette, No. 37). Further provisions may be found in the Ministerial Decrees of August 27th, 1873 (Imperial Legal Gazette, No. 139); of January 20th, 1875 (Imperial Legal Gazette, No. 8); of September 18th, 1875 (Imperial Legal Gazette, No. 126); of March 9th, 1876 (Imperial Legal Gazette, No. 27); of October 14th, 1922 (Federal Legal Gazette, No. 810); of January 24th, 1923 (Federal Legal Gazette, No. 60), and of February 17th, 1923 (Federal Legal Gazette, No. 132). Supplementary provisions regarding the examination for district health affairs are being prepared.

With regard to other laws and decrees in connection with the public sanitary administration, and to the individual branches of this administration, reference should be made to "The Handbook of Austrian Sanitary Laws and Decrees for Public Authorities and Communes, etc." by *J. Daimer*. Vienna, F. Deuticke, Part I, 1896, Part II, 1898.

The following are the subjects of the medical officers' examination:

1. Hygiene and Sanitary Law;
2. Medical Jurisprudence, including Forensic Psychology;
3. Pharmacology, including a knowledge of the commoner Poisons;
4. Chemistry;
5. Veterinary Police Regulations.

The examination takes the form of written, practical, and oral tests.

The written examination, for which twelve hours are allowed, is taken under supervision. For the practical examination, the candidate has to conduct an autopsy, to dictate the results as if in evidence, and to attach his personal opinion. He must also examine and give an opinion upon the condition of an injured or insane patient, carry out a qualitative chemistry test, and must finally give proof of his knowledge of any drugs and poisons submitted to him.

Similar regulations for veterinary surgeons are contained in the above-mentioned decrees. Since 1906, however, the Veterinary Service, which was up to that time associated with the Medical Sanitary Police, has been separated from the latter and been made subordinate to the present Federal Ministry for Agriculture and Forestry. New regulations have since been issued for the veterinary examination.

In regard to the question of the training and recruitment of State medical officers in Austria, it should further be stated that fundamental provisions on this subject are contained in the Decree of the Ministry of the Interior, dated March 21st 1873 (Imperial Legal Gazette, No. 37), regarding the examination of doctors and veterinary surgeons with a view to their appointment to permanent posts in the Public Sanitary Services under the political authorities.

This ministerial decree was supplemented, and in places modified, by the Ordinance of the Ministry of the Interior, dated August 27th, 1873, Zl. 8065, and by the Decrees of the Ministry of the Interior, dated August 28th, 1873 (Imperial Legal Gazette, No. 139); January 20th, 1875 (Imperial Legal Gazette, No. 8), and September 18th, 1875 (Imperial Legal Gazette, No. 126).

The above-mentioned provisions, together with the Law of April 30th, 1874 (Imperial Legal Gazette, No. 68), regarding the organisation of the Public Sanitary Services, which contains, among other clauses, provisions specifying the official duties

of the State medical officers, are printed in the "Handbook of Austrian Sanitary Laws and Decrees for Public Authorities and Communes, etc." by *Josef Daimer, M.D.*, Part I. (pp. 3-23). Published by Deuticke, Leipzig and Vienna, 1896.

The first-mentioned Ministerial Decree, paragraphs 15 and 23, were modified by the Ministerial Decrees of April 30th, 1921 (Federal Legal Gazette, No. 276); April 17th, 1922 (Federal Legal Gazette, No. 236); October 14th, 1922 (Federal Legal Gazette, No. 810), and February 17th, 1923 (Federal Legal Gazette, No. 132), which adjusted the fees for the medical and veterinary inspectors' examination to the new conditions prevailing. Moreover, the provisions regarding the veterinary inspectors' examination were revised in the Ministerial Decree of January 24th, 1923, Federal Legal Gazette, No. 60.

There are not at present any statutory or other provisions regarding the subsequent professional training of State medical officers; special courses are, however, held from time to time for this purpose in university towns, more especially Vienna, to which medical officers are sent in rotation. Moreover, medical officers are able to extend their knowledge by being attached temporarily to scientific and other expert institutions dealing with their special subjects.

Finally, it should be noted that the Federal Ministry of Social Affairs (National Health Office) is preparing a reform of the district medical officers' examination.

In the administrative year 1922 there were, in all, 222 medical officers employed in the State Sanitary Services — the Central Office (National Health Office in the Federal Ministry of Social Affairs) employing 32, the Political Administrative Authorities of the first and second degree 129, and the Police 61.

These State officers are Federal officials, and their work under the State health administration must be conducted as their main profession. They are remunerated in accordance with the salary laws regulating the salaries of Federal officials (Federal Laws of July 13th, 1921, Federal Legal Gazette, No. 376, and of June 28th, 1922, Federal Legal Gazette, No. 367). They are not forbidden to practise privately in addition to discharging their ordinary official duties — this applies for the most part, however, only to medical officers of the first degree. The fees received by doctors and midwives for attendance on patients without means, or women in labour and foundlings, are regulated by the provincial laws. Medical officers are not, however, obliged to attend cases of this nature by virtue of the position held by them in the Public Sanitary Services.

There are no statutory regulations regarding the fees of doctors and midwives in private practice, but certain general principles, *e.g.*, in regard to scales of charges (which are not, however, legally binding), are laid down from time to time by the professional medical organisations.

The fees charged by the sanitary officials and veterinary police (official charges) are regulated in a recent decree, Federal Legal Gazette, No. 316, Item 65, page 786 *ex* 1923. Doctors in communes receive special remuneration for work done in the district under their charge (*i.e.*, their official district).

2. PHARMACEUTICAL CHEMISTS.

The enforcement of the regulations contained in the Pharmacy Law is the duty of the administrative authorities of the first degree. Requests for licences are dealt with by the administrative authorities of the Province.

Infringements of the Pharmacy Law, or of any regulations issued to give effect to it, are punished by the administrative authorities, unless the offence comes under the provisions of the general penal law. Among the more important enactments of recent date may be mentioned the decree of August 18th, 1922 (Federal Legal Gazette, No. 625), by which new regulations were introduced in regard to the training and examination of chemists. By a Decree, dated October 6th, 1914 (Imperial Legal Gazette, No. 287), arrangements were made for shortening the period of pharmaceutical training in the case of doctors or of physicians studying all branches of medicine; in other respects they must fulfil all the conditions laid down for fully qualified pharmaceutical chemists before they are allowed to carry on a pharmacy of their own. The Decrees of October 7th, 1920 (State Legal Gazette, No. 461), and of October 22nd, 1920 (State Legal Gazette, No. 493), deal with the supervision of the prices charged for making up medical prescriptions by public pharmacies and with the control of the composition and nature of medicines.

In the Austrian Federal provinces, including Vienna, there are at present 602 pharmacies. Vienna has 218. Of this number four are State pharmacies and 16 are attached to public hospitals. According to these figures, there is on an average one pharmacy in Vienna for every 8,300 inhabitants. The proportion is the same for the Federal Province of Austria, which appears to be in the most favoured position, whereas Vorarlberg possesses the smallest number of pharmacies compared with the number of inhabitants. The net profits of the Federal pharmacies flow into the State Treasury.

In the whole of Austria there are 720 fully-qualified pharmaceutical chemists (magisters of pharmacy) engaged in business (of whom 394 are in Vienna). They are divided into dispensers who are qualified to take charge of a pharmacy, "quinquennium" assistants, *i.e.*, chemists who have served for five years with a view to being qualified to take charge, and assistants with less than five years' practical experience.

Matters connected with pharmacies in Austria are regulated by the so-called Pharmacy Law of December 18th, 1906 (Imperial Legal Gazette, No. 5 *ex* 1907), which was established partly on the basis of earlier legal enactments. The special provisions with regard to pharmacies have their origin in the duties which pharmaceutical chemists were formerly called upon to discharge. These duties consisted in supplying the population with the medicines required for the protection of public health. In spite, however, of their special position, chemists are traders within the meaning of the Trade Law and are subject to the provisions of that law in the same way as other traders.

A distinction is drawn between public pharmacies, on the one hand, and the private pharmacies of doctors and veterinary surgeons and emergency pharmaceuticals

installations on the other. Pharmacies attached to institutions also form a special group.

Public pharmacies are either licensed or proprietary, the latter being those whose business is connected with a certain house or family. No person may possess more than one pharmacy licence or personally take charge of more than one public pharmacy.

In order to obtain an authorisation to carry on the business of a public pharmacy on one's own account or to dispense drugs, the applicant must be a citizen of the Austrian Republic, possess full civil rights, hold a degree as a Master of Pharmacy, have undergone subsequent technical training for a minimum legal period of five years and, in the case of the establishment of new pharmacies, for 15 years, and finally be a person of recognised trustworthiness. The nature of the work which is to be regarded as technical training within the meaning of the Pharmacy Law is specified in the Ministerial Decree of April 19th, 1908 (Imperial Legal Gazette, No. 80).

The employment of assistants in pharmacies is regulated by the Ministerial Decree of March 5th, 1912 (Imperial Legal Gazette, No. 47), which was amended and supplemented where necessary by the Executory Order of February 25th, 1920 (State Legal Gazette, No. 90), and the Ministerial Decree of May 26th, 1922 (Federal Legal Gazette, No. 306). It should further be mentioned here that, in pursuance of a Decree, dated September 3rd, 1900 (Imperial Legal Gazette, No. 150), women may also be permitted to practise as pharmaceutical chemists.

In order to carry on the business of a public pharmacy it is necessary to obtain a special licence ("Konzession") from the authorities. A definite procedure is laid down for granting this licence so as to ensure that the essential conditions established by law have been duly satisfied. The licence to carry on the business of a public pharmacy is personal and therefore not transferable. Public pharmacies are under an obligation to carry on business; notice must be given to the authorities at least two months beforehand if it is proposed to discontinue the business.

The right to carry on the business of a pharmacy may, under certain circumstances, be temporarily withdrawn from the licence-holder by the authorities as a penalty for infringement of the pharmacy regulations. The permanent withdrawal of a licence is also provided for under the terms of the law.

A licence to maintain a *house pharmacy* is granted to a doctor when there is no public pharmacy at his place of residence and when the nearest pharmacy is so distant that a centre for the supply of medicines is required in the neighbourhood. If a doctor transfers his residence to another district, the licence granted in respect of the former place of residence ceases to hold good. The licence is withdrawn if the house pharmacy becomes unnecessary by reason of the establishment of a public pharmacy.

Doctors resident in localities in which there is no public pharmacy are bound, if they have not obtained an official licence to maintain a house pharmacy, to keep an emergency pharmaceutical installation, containing the medicaments necessary for rendering first-aid.

Chemists' associations, which form a sort of industrial syndicate, act as the representatives of the chemists on professional questions: chemists' unions have not yet been established.

3. DENTAL OPERATIVES.

In Austria, as in other countries, controversy has frequently raged round the question of determining the legal status of dental operatives and settling their claims to perform the work of fully qualified practitioners. The difficulty of solving the problem has been accentuated by the fact that, during the war and in the army, dental operatives carried out duties which frequently differed very slightly from those of qualified dentists. It was only in 1920 and 1921 that the position of dental operatives was regularised and their legal status, as compared with that of qualified practitioners, duly established. The laws in question chiefly consist of amendments and additions to the so-called Dental Operatives Law of July 13th, 1920 (State Legal Gazette, No. 326), according to which operative dentistry constitutes a profession for which a licence is required. The alterations introduced by the laws of October 1st, 1920 (State Legal Gazette, No. 470), and April 15th, 1921 (Federal Legal Gazette, No. 255), led to operative dentistry, and the persons engaged in that profession, being excluded from the operation of the Labour Regulations, and established the legal status of these persons on an entirely different footing. Under these laws, operative dentistry is described as the manufacture and repair of artificial teeth and dental substitutes. In addition, qualified dental operatives may remove the tartar from teeth, clean the teeth, file down teeth and roots and stop teeth or roots (and likewise treat the roots). Further, qualified dental operatives who pass a practical examination may extract teeth or roots which interfere with the fitting of artificial teeth, but may not use narcotics or anæsthetics for deadening the nerves.

Apart from doctors qualified to practise dentistry, the profession of dental operatives can only be carried on by duly authorised persons. These include persons who already hold a professional licence to practise this calling in Austria, and also persons to whom an authorisation is expressly given. The main conditions for obtaining it are attendance at a three-years' training course in operative dentistry and at least six years' experience as an assistant in such work. The period of training can be carried out either under a duly qualified dental operative or a dentist.

As the authorisation to engage in operative dentistry can only be conferred upon persons who began their three-years' course of training before October 1st, 1920, and have proceeded with it without interruption since, the dental operative in Austria with a recognised professional status must necessarily disappear in the course of a few decades. Special professional bodies were established in each province to protect the rights of duly qualified dental operatives and to promote the interests of the assistant staff engaged in dental work. The rights and powers of these corporations are regulated by a Ministerial Decree dated February 14th, 1921 (Federal Legal Gazette, No. 107). Since the issue of the above-mentioned regulations, dental

operatives have been able to carry on their work without any dispute arising between them and the fully qualified dentists.

4. MIDWIVES.

Though midwifery has been raised to a high level of efficiency in Austria, corresponding to the exceptional importance of the subject from the point of view of public health, there is as yet no uniform law on midwifery which is applicable to the whole country. The most important provisions are those of section 2 of the Sanitary Law of April 30th, 1870 (Imperial Legal Gazette, No. 68). The Communal Midwifery Service is regulated by law only in the Provinces of Carinthia (Provincial Law of December 15th, 1920, Provincial Legal Gazette, No. 83 of 1921), Vorarlberg (Provincial Legal Gazette, No. 61, March 31st, 1922), and the Burgenland (Provincial Legal Gazette, No. 13, August 2nd, 1922). Midwives are not subject to the provisions of the Labour Law. Under certain circumstances it is an offence, punishable by administrative action, for an unqualified person to give assistance in midwifery cases. Women who wish to become midwives have to take a ten-months' course of instruction in an Austrian Instructional Institute and then undergo the so-called "strict examination test" before a Commission, as a result of which they receive, if successful, a diploma which entitles them to practise midwifery (as an independent profession) throughout the territory of the Republic of Austria. There are at present six of these Instructional Institutes (in Vienna, Linz, Salzburg, Innsbruck, Klagenfurt and Graz). Before beginning to practise, midwives have to report to the administrative authorities; they have to keep a birth register, and are placed under the supervision of the district medical officer.

Midwives must observe the provisions contained in the instructions issued under the Ministerial Decree of September 10th, 1897 (Imperial Legal Gazette, No. 216), in which their duties are laid down, except in so far as certain of the latter are already enforced under the general penal law.

No State midwifery system has been instituted in Austria. The autonomous administrative bodies (communes, towns) have to provide midwives for women in confinement who are without means. A proposal for a general midwifery law, which would make important changes in the existing arrangements, is at present awaiting consideration by Parliament. It is based upon the extensive experience of Professor *L. Piskacek* of Vienna and has been drawn up with his valuable assistance.

No provision has been made in the law for the professional representation of midwives. Their interests are protected by their unofficial professional organisations, established on the basis of the law recognising the right of association.

IV. HOSPITALS.

On the occasion of the re-organisation of certain matters connected with the hospital system, which was effected by the Hospitals' Law of July 15th, 1920 (State

Legal Gazette, No. 327), the previous regulations with regard to the hospital system, which still remained in force, were embodied in the law in question. This law therefore constitutes a codification of such existing legal provisions in this domain as come within this sphere of public law. Certain supplementary provisions are contained in the Federal Law of February 3rd, 1923 (Federal Legal Gazette, No. 72), and in the Federal Law of June 16th, 1923 (Federal Legal Gazette, No. 321); the main effect of the latter was to modify Articles 13, 17 and 27 of the above-mentioned law.

Hospitals and homes are either public or private. Public establishments are those which, at the time when the law first came into operation, already existed as public institutions, or upon which the character of "public" institution, within the meaning of the Hospitals Law, has since been conferred, or which were opened as public institutions within the meaning of that Law.

Institutions of the kind specified below can be opened as "public" institutions or, if already in existence, can secure recognition as such:

- (a) General hospitals, *i.e.*, institutions for persons in need of hospital treatment without distinction as to disease or age; the maternity wards in general hospitals are also included;
- (b) Special hospitals (*e.g.* hospitals for infectious diseases, diseases of the lungs, tuberculosis, lupus, and venereal diseases; inebriates' homes; institutions for persons suffering from nervous diseases; infants' or children's hospitals; homes for cripples, etc.);
- (c) Convalescent homes;
- (d) Homes for incurables, excluding institutions designed to fulfil the obligations of the Poor Law, and lunatic asylums;
- (e) Maternity institutes and nursing homes for women in pregnancy who are not able to work and for women who have been confined.

The status of "public" institution is conferred by the Federal Ministry for Social Affairs. The conditions are that the institution should be useful to the community, that it should be in a position to fulfil the legal obligations imposed upon it, that its continued existence and use as a hospital should be certain, and that it should be administered and managed by a public legal officer, an endowment board, the board of a public foundation, or some other corporate body.

Establishments which are built as public institutions must also fulfil these conditions.

The territory, for the advantage of whose population the public institution is intended in the first instance, is known as the appointed district of the latter. The appointed districts of a province taken together form a hospital circumscription. The territory of a province may be divided into several such circumscriptions.

A hospital committee is established for each circumscription, and definite administrative duties are assigned to it.

Statutes, instructions and internal regulations are issued for each public institution. The law lays down principles with regard to the administration, medical control, and management of public hospitals and homes.

In all such establishments there may be different scales of charges but there must always be an ordinary fee section, which, however, may only be used by persons without means.

The nursing fees in every public institution are fixed in advance by the District Commissioner. These fees cover the cost of board and lodging, medical examination and treatment, medicine, nursing, and (should the patient die) the expenses of a simple funeral, but do not include the conveyance of the patient to and from the institution, or the supply of such requisites as spectacles, artificial limbs, etc. However, the latter are, where necessary, provided by the institution against future payment.

In addition to the nursing fees, special additional fees are charged in the higher fee section (in no case in the ordinary section) for operations and for other special services necessary for purposes of treatment or diagnosis.

Sickness insurance associations are not required to pay the full nursing fees of the ordinary class in respect of their members.

Nursing fees which cannot be collected must be paid out of the funds of the province, except in special cases (*e.g.*, the nursing fees of foreigners who are unable to pay) in which the State is liable to make good the loss. Provision may be made in the legislation of the province to determine the extent to which the communes are liable in respect of nursing fees which cannot be collected.

If the receipts of a public institution are insufficient to cover the cost of maintenance and administration, two-eighths of the deficit is borne by the appointed district, three-eighths by the province or hospital circumscription, and three-eighths by the Federation. The costs occasioned by the construction, alteration or extension of a public institution are met in the same way, after allowance has been made for the share of expenditure covered by donations, endowments and voluntary contributions.

The Federal Ministry for Social Affairs is responsible for the supervision of all public hospitals and homes. If the management of a public institution reveals abuses which cannot be remedied in any other way, the District Commissioner may temporarily transfer the administration of the institution, subject to safeguarding the rights of ownership, to the office appointed for that purpose.

The status of "public" institution may be withdrawn from a public institution by the Federal Ministry for Social Affairs if it does not fulfil public health requirements.

The voluntary closing of a public medical and nursing establishment requires the authorisation of the Federal Ministry for Social Affairs.

As regards the establishment of private hospitals, the principles governing the matter were laid down in a Decree of the Ministry of the Interior, dated March 2nd,

1892, Z. 14498. According to this law, an official licence from the provincial authorities is required for the opening of private institutions for charitable, medical and convalescent purposes, mineral springs and medical baths of all kinds, and only those institutions may be licensed in which treatment is given according to recognised scientific principles and definitely established methods, and which are suitably equipped. In any announcements with regard to the institution, the licensee must not recommend methods of treatment which are contrary to scientific practice, and must likewise avoid all highly coloured and unprofessional advertisements. In connection with the establishment of institutions in which a new curative treatment is to be employed, a decision must first be obtained from the Public Health Office, and not till then may application be made to the authorities immediately responsible for such matters. All private medical institutes must be under the control and responsible supervision of a duly qualified doctor. A new Decree of the Lower Austrian Provincial Government of March 3rd, 1922, Z. 1, page 352, lays down the conditions under which an institution may take the name "Kuranstalt". The supervision of these institutions is exercised by the Government — through the intermediary of the communes — by means of the State medical officers in the districts assigned to them. If the regulations are not strictly observed, penalties may be imposed, or the licence may be withdrawn. It may be observed here that private hospitals in Austria very seldom give any ground for complaint, since the most scrupulous care is taken in granting licences and the supervision is continuous and strict. The costs of nursing the sick in private hospitals and of tending poor persons who are sick but who are not admitted to hospitals, are borne by the commune to which the persons belong. The hospitals of the Brethren of Charity, and hospitals attached to convents, which are required to maintain their institutions according to the rule of their order by collecting charitable gifts, are not entitled to the repayment of the costs of nursing out of public funds.

The public lunatic asylums are generally provincial institutions. The conditions under which patients are admitted and discharged, and the arrangements connected with these institutions, are laid down by the Statutes under which they are established. These Statutes must be approved by the Public Health Office. The physician in charge of the institution must, within twenty-four hours, send to the "court of first grade" (the district court) within whose jurisdiction the institution is situated notification of the admission of a patient, together with a request that the receipt of the notification should be acknowledged. A patient can, as a rule, only be admitted on the strength of a medical certificate in which the nature of his mental disorder is stated. A medical history sheet must be supplied by the doctor in charge of the case. The certificate must be confirmed by the medical officer of the district or commune and must be prepared not more than fourteen days before the application is made for admission. Before a person in Austria, who is responsible for his actions, can be certified as being mentally deranged, special legal procedure is necessary; the mental condition of the person concerned is carefully examined, and expert medical opinion is, if necessary, obtained. Proceedings of this kind, designed to declare a person incapable of managing his affairs, can be taken on account of mental disease.

in general which lead to a weakening of will power, or which might result in the person injuring himself or those around him, and also in cases of dipsomania and addiction to morphine and cocaine. In order to safeguard the interests of an adult who is declared to be mentally deranged, a sworn guardian must be appointed by the court; and such guardianship can only be removed by the court. Special regulations are issued with regard to the conveyance of mentally deranged persons. The discharge from hospital of a person who was placed in the institution by the police authorities as being a danger to the community must be notified to these authorities; the competent court must be informed of the discharge of cured persons who have been placed under guardianship. A complete record of every patient must be kept in each institution. Patients who are not cured may also be discharged if a written undertaking is given by one of their relatives or legal representatives whereby the proper supervision of the patient is guaranteed. The administrative or municipal authorities must, however, certify on the declaration that such supervision is, in fact, possible. Private lunatic asylums, of which there are only six in Austria, must strictly observe the provisions of the Ministerial Decrees of May 14th, 1874 (Imperial Legal Gazette, No. 71), and of July 4th, 1878 (Imperial Legal Gazette, No. 87). The Government exercises its right of supervision by means of its sanitary organisations. As in the case of the hospitals, it may also be said of public and private lunatic asylums in Austria that they fulfil in every respect the conditions required for such institutions. The communes and, in particular, their medical organisations are bound to keep registers of the lunatics within their jurisdiction who are not placed in lunatic asylums, and to supervise their treatment. They must take especial care to see that sick persons of this kind are not subjected to inhumane treatment, and that no restrictions are imposed which are not justified by the nature of their disease. The communes must notify the competent district court of the names of mentally diseased persons who are not under the control of parents or guardians, with a view to further action being taken if necessary.

The public maternity institutions are generally provincial institutions. There is one in each of the following towns: Vienna, Linz, Graz, Salzburg, Klagenfurt and Innsbruck. In Vienna and Graz, foundling homes are attached to the maternity institutions. There are nursing homes for maternity cases in Vienna, Graz and Innsbruck, and schools for midwives in Vienna, Linz, Graz, Salzburg, Klagenfurt and Innsbruck. The French system called "admission à bureau ouvert" is employed in Austrian foundling institutes: the principle is that of conditional admission, according to which, except in cases in which the maintenance of the child excludes every other consideration, *e.g.*, cases of children who have been actually abandoned or whose life is in danger, enquiries are made as to the name and circumstances of the mother. Information, however, is obtained with discretion, in order to spare the feelings of the parties concerned, and it is given under the seal of official secrecy. There is only one private maternity home, properly so called, in Austria, but there are special wards for confinement cases in various public and private hospitals and sanatoria. Special statutes are established for every maternity or foundling institute for the regulation

of all matters connected with management and administration. The foundling home in Vienna is known as the "Zentralkinderheim" and is the pattern for such institutions. There are numerous regulations instructing the authorities and medical officers to supervise the proper treatment and education of foundlings boarded with private families. The communes are responsible for keeping the registers of the foundlings who are not housed in public institutions, and also for supervising their treatment. The medical treatment of foundlings boarded in the country and the question of repayment and final adjustment of the expenses incurred for this purpose are regulated by special provisions.

There are only two large hospitals exclusively used for cases of infectious diseases; they are both in Vienna and contain about eighteen hundred beds. Further all public and most private hospitals, as well as maternity homes and lunatic asylums possess isolation sections or wards, and, in addition, buildings, which exist in almost all administrative districts and towns for use in the event of an outbreak of epidemic diseases, can be used as hospitals, so that emergency epidemic hospitals can be established at any moment.

All public and private hospitals have to send periodical statistical reports to the authorities entrusted with the duty of supervision. These reports are transmitted to the provincial authorities and finally to the Public Health Office.

The last complete set of statistics for hospitals and similar institutions for the Empire was drawn up in respect of 1912 and published in 1915 (Austrian Statistics New Series, Vol. 11, Part 2). The tables deal with:

A. Hospitals.

1. General Summary.
2. List of diseases of persons whose treatment has been completed.

B. Lunatic Asylums.

1. Number of patients in the various institutions;
2. Number of lunatics under treatment, classified according to the various forms of mental derangement;
3. Number of newly-admitted lunatics, classified according to the various forms of mental derangement;
4. Number of patients discharged from the lunatic asylum cured, arranged according to the various forms of mental derangement;
5. Number of lunatics who have died, arranged according to the various forms of mental derangement;
6. Summarised figures regarding the number of patients, arranged according to the various forms of mental derangement;
7. Personal circumstances of the lunatics.

C. Public Maternity Institutions.

It would be exceeding the scope of this memorandum to enter into further details.

The hospitals available in Austria for the treatment of the sick are divided into establishments managed by the State, the Federation or some other autonomous body (province or commune), and those maintained and administered by the representatives of private bodies. Public hospitals are, as has already been shown by the information given with regard to the Hospitals Law, those which are authorised to demand from patients payment of nursing fees, according to the scale laid down for the time being by the State. Austria possesses altogether 479 hospitals — either for general or special purposes — which may be classified as follows:

Federal hospitals (including 2 for disabled ex-service men)	5
Vienna endowed hospitals (State) (including the Vienna University clinical hospitals)	11
General public hospitals (including the University clinical hospitals at Graz and Innsbruck)	85
Private hospitals, sanatoria, hydropathic establishments and convalescent homes	351
Public lunatic asylums	15
Private lunatic asylums	6
Public maternity homes	5
Private maternity homes	1
	<hr/>
	479

If we calculate the number of beds available, according to the above total of public and private hospitals, we arrive at a round figure of 17,000 for all classes of hospitals in the Republic of Austria. As the population numbers 6,535,000, there are 6 or 7 beds (in Vienna 9 or 10) per 1,000 inhabitants. This number of beds, however, is not available for the whole community, for the above enumeration includes private hospitals, which are employed for special purposes. If these are deducted, there are 5 or 6 beds per 1,000 inhabitants, taking the Republic as a whole, and 7 or 8 in Vienna. Excluding Vienna, Steiermark appears to be the Federal province best supplied with hospital beds and Vorarlberg the worst.

The total number of hospital beds in Austria, as given above, including those in the Federal hospitals, is apportioned as follows (without distinguishing between the individual provinces):

General public hospitals (including the Federal and Vienna endowed hospitals)	approximately	24,000
Private hospitals	approximately	6,700
Maternity homes	approximately	1,000
Public lunatic asylums	approximately	11,000
Private lunatic asylums	approximately	500
		<hr/>
	approximately	43,200

This total includes, as has already been pointed out, the figures for hospital employed for special purposes — in particular, for cases of tuberculosis and as home for infants.

V. HEALTH RESORTS AND WATERING-PLACES.

The State administration is authorised under the Imperial Public Health Law to sanction the opening of curative baths and spas and is responsible for their supervision. No institution of this kind can be opened without a licence, which may be issued by the provincial authorities after they have obtained the expert opinion of the provincial Board of Health. Baths and spas must be under the management and responsible supervision of a qualified medical practitioner. Before a place can be included in the list of health resorts, particulars must be given of the facilities it affords for treatment and of the persons who visit it for the cure. When a resort is opened the strictest enquiries must be made into the situation and yields of the springs, the possibility of protecting them from pollution, the conveyance and utilisation of the water in the institution, the manner in which the institution is equipped, whether the accommodation and food of the visitors are entirely satisfactory, the nature of the medical supervision, and the character of the responsible director. So far no general regulations have been issued for health resorts, but the following statements can be regarded as applying in most cases. Every health resort and mountain station opened with the sanction of the State for public use must have regulations of its own. These regulations define the area over which it extends and lay down the organisation of the institution. The following are responsible for the management:

- (a) The spa or health resort committee;
- (b) The directors of the institution;
- (c) The spa physician or physician to the mountain health resort.

Each resort has appropriate regulations of its own. The managing board may even be expected to see that suitable arrangements are made for transport facilities to ensure that the air in the neighbourhood is kept pure and the ground clean, to see that everything is laid out with a strict regard to public health, to supervise dwelling and food and drink, and to take suitable precautions against the outbreak of infectious diseases. The rules for the trade description and despatch of mineral water were laid down in the Decree of the Ministry of the Interior, May 23rd, 1881, Z. 21035.

In the case of health resorts, including places where the water is only bottled for trade purposes and is then sent to the market, statistical returns for the past year must be made annually to the provincial authorities, who, as far as possible, embody them in the public health report and forward the material thus obtained to the Federal Office for Statistics. Since the 1912 report, which was published in 1915, no statistics on this subject have been issued for the Empire. The reports for each place gave the following particulars:

Visitors to health resorts												Description of consignments and quantities exported	Number of Physicians				
Persons								Period of stay		Compared with previous year							
From the province in which the resort is situated	From other provinces of the Austro-Hungarian Monarchy								Up to 6 days	Over 6 days	More	Fewer	Mineral water	Powders etc., obtained from the waters	Permanent	Temporary	TOTAL
	From other European countries																
	From other Continents																
	Total																
	Male																
	Female																
	Total																

Unfortunately, lack of time has prevented us from giving a comprehensive and — especially from the balneological point of view — strictly accurate account of the rich and in every way remarkable *mineral* and *curative springs* of *Austria*. Special emphasis should, however, be laid on the desirability of employing that natural grouping of the mineral constituents of the springs which *I. Knett*, the Austrian inspector of central springs (following up the theories of *G. von Than* and of *E. Ludwig*), strongly recommended. In this connection, we would especially direct your attention to Knett's work called "The New Springs and Wells of Franzensbad" (Franzensbad, published by the Municipal Council, January 1923), in which he explains and gives reasons for his classification of types.

This method of dealing with the subject enables the student to obtain all the data necessary for the scientific description of mineral waters, whether as regards their physical-chemical qualities, or the geology of the springs. It would be very desirable, in this sphere also, to arrive at uniform international formulæ for describing all mineral water phenomena in the world. This would also seem advisable from a medical and balneological standpoint, if only to get rid once for all of the many arbitrary interpretations which are placed on the results of analyses.

A *mineral waters monopoly*, which was established in 1922 by Decree of the Federal Ministry of Finance of January 23rd (State Legal Gazette, No. 43), and the Executory Provisions of April 29th (State Legal Gazette, No. 202), was cancelled by a Decree of July 24th, 1923 (Federal Legal Gazette No. 497), as not being sufficiently profitable to the State, and the right to produce and manufacture artificial mineral waters was granted to a private share company in Vienna. Prepared products for drinking or bathing purposes must first be tested at the State pharmaceutical investigation centre of the Office of Public Health before permission is granted for their sale.

Bathing establishments without any special curative object may be carried on without a special licence.

There are no statistics of the available public bathing establishments in Austria, and we were unable to compile them in the short time at our disposal. In Vienna there are at present 68 bathing establishments (river, swimming, tub and shower-baths), so that — disregarding their general distribution and the size and equipment of the various establishments — there is, on an average, one public bathing establishment to every 23,000 inhabitants. It is to be noted that, in accordance with industrial regulations, shower-baths must be provided for the employees of all large works. Austrian hotels and inns are unfortunately, as regards the number of bathrooms available, very far behind modern requirements; in private houses also far too little has been done in this direction.

VI. REGISTRATION OF BIRTHS AND DEATHS.

According to the laws and regulations at present in force, the religious communities are called upon to keep the records of births and deaths, and for this purpose special parishes have been created for registration and enrolment. These records are kept according to completely uniform rules, so that summaries therefrom enable us to obtain correct statistics.

Every quarter these official summaries are sent by the registry offices to the proper district or municipal authorities; they are then forwarded to the provincial authorities, who draw up short provincial statistics, and are passed on to the Public Health Board or the Federal Office for Statistics in order to be elaborated into a single set of statistics. Vienna has its own statistical department, which sends out reports for its own district at shorter intervals and for different purposes.

The following religious communities are obliged by the State to keep records of births and deaths, and are divided into registration parishes: the Roman Catholic, Greek Catholic, Old Catholic, Orthodox Greek, the Augsburg Evangelical Confession, the Swiss Evangelical Confession, the Israelite and Turkish Israelite faiths. Moreover, at the headquarters of every district commandant (Bezirkshauptmannschaft), or of every town enjoying the rights thereof, a civil register is kept showing the births and deaths of persons professing no religion or belonging to sects for whom there is no special registration office in Austria. Formerly, special registers were kept for soldiers on active service and their wives and children.

1. BIRTHS.

The usual lists of births, which are summarised from the contemporaneous records of births, and which form the foundation for the Government central statistics come under the following categories: (1) Current number of the reference; (2) Number of the birth record-book; (3) Day of birth; (4) Month of birth; (5) Place of residence of

the mother; (6) Whether male or female; (7) Whether legitimate or illegitimate; (8) Whether living or still-born; (9) and (10) Trade or occupation of the father, or, in the case of illegitimate children, of the mother; (11) Whether obstetric aid was given by a doctor or a certified midwife; (12) and (13) Year and day of birth of the father or mother; (14) Date of marriage of the parents (day, month and year), and (15) Remarks. The heading bears the name and place of the registration office and parish in question, and also the words "List of children for the quarter 192 ."

With reference to point (6), it may be explained that the natural phenomenon of variability of sex, which occurs very rarely, does not require a special category, as it can be entered under "Remarks" after the finding of the experts when this is necessary.

With reference to point (8), it must be noted that the term "still-born children" is understood as referring to children who, though fully developed, are dead when they come into the world; abortive premature births may not be entered in the State registers of births. Each child of a plural birth is to be entered separately, and the categories are to be bracketed to indicate plural birth.

The midwife or the doctor is bound, under penalty, to report a birth, or, in the absence of these, the legitimate father or the unmarried mother of the child. Foundlings and children deserted soon after birth, and found alive, are also entered in the birth record-books, special regulations being followed in such cases.

Up to the year 1913 inclusive, birth statistics were drawn up by districts or towns; afterwards by Federal provinces. The figures were given under the following headings:

1. Number of births, according to sex, parentage (in wedlock or out of wedlock), vitality (born alive or dead), in actual and in relative numbers.
2. Number of children born in the various religious creeds.
3. Creed of children born, with reference to parentage and sex.
4. Births per month, according to vitality and sex.
5. Duration of wedlock from which the children have sprung.
6. Ages of fathers.
7. Ages of mothers.
8. Comparative ages of parents.
9. Occupation of fathers or of unmarried mothers.
10. Plural births, and births according to combinations of sex, parentage, sex and vitality.

Since the year 1914 the extensive centralised work has been suspended, and was not resumed until quite recently (May, 1923), when the number of children born in the years 1918-1921, reckoned according to vitality, as contrasted with the year 1913, was reported by the Federal Statistical Office of the Republic of Austria (not including the Burgenland).

2. DEATHS.

The lists of deaths, taken from the register of deaths, which have to be sent quarterly by the registrars, as well as the list of children born, contain the following headings:

1. Current number of reference.
2. Number of death-register.
- 3 and 4. Day and month of death.
5. Locality where the death took place.
6. Whether deceased is male or female.
7. Whether single, married, widowed or divorced.
8. For children under 6 years of age, whether legitimate or illegitimate.
9. In the case of married persons: Date of the marriage ended by the death (day and year).
- 10 and 11. Trade or occupation — for children under 15 years of age: Trade or occupation of the father, or of the mother, if the child is illegitimate.
12. Day of birth and year.
13. Age last birthday.
14. Parish where born and administrative district.
15. Whether or not deceased was a stranger in the place where he or she died.
16. Cause of death.
17. Whether or not the cause is certified by a doctor.
18. The proper number of the mortality tables (to be filled in by the official doctor).
19. Remarks.

The registrars obtain the notices for the entries in the register of deaths from the proper coroners' lists.

Whenever anyone dies or is found dead, the relatives or the person or person finding the body have to notify the chairman of the parish council, who will send the coroner to the spot. The coroner's inquest — compulsory in Austria since 1766 — is entrusted to the parish or other doctor. As a rule, the coroner is allowed no inspection of the bodies of persons whom he has himself treated in their last illness.

Should the appointment of a medical coroner not be possible, a responsible person, nominated by the parish council, is appointed, instructed in his duties, and sworn in by the first grade administrative authorities. If medical treatment has been given before decease, the doctor attending fills up a certificate of treatment in which the name of the disease must be stated with the greatest possible exactitude.

In cases in which the coroner's inquest is not entrusted to doctors, the coroner has to copy the definition of the causes of death from the doctor's certificate of treatment into the death certificate, and, failing a doctor's certificate of treatment, must state as precisely as possible, and in the language of the locality, the causes of death, so far as they are known.

The coroner's inquest regulations are different in the various Federal provinces,¹ but the following can be regarded as the general rule: when the coroner is certain that death has really taken place, he must determine the cause of death, aided by the conclusions arrived at on examination of the body, the data in the certificate of treatment, or the symptoms and conditions ascertained to have been present before death supervened; at the same time he must also satisfy himself that the death was a natural one and was not due to criminal or other acts or neglect calculated to imperil human life, or that the person on whom the inquest is held actually lost his life either merely by accident or through his own carelessness or by suicide.

When females die in the second half of the period of pregnancy, Cæsarian section (*sectio cæsarea*) is to be duly performed if there are any signs of embryonic life.

If, on examining the body, the coroner has not been able to obtain any suggestions helping him to determine the cause of death, and if the enquiries made prove fruitless, he must furnish a written report of all observations and enquiries through the medium of the parish council to the administrative or municipal authorities, or, when unlawful action or neglect calculated to have caused death is suspected, to the proper tribunal.

When death has been indisputably proved, and when the cause is adequately known, and when there is no reason whatever to suspect that death is in any way due to criminal action or neglect, the finding of the coroner is to be made out in duplicate, one copy going to the parish council and one to the proper registrar, to be entered in the prescribed register of deaths.

When, in order to ascertain the cause of death, the authorities order a *post-mortem* examination by the sanitary police or the court, the coroner is obliged to place his medical services at their disposal, if necessary, at sanitary police or court *post-mortem* examinations held in his district. There are special prefectures for this purpose in Vienna.

When the official enquiry into the cause of death has thus been made, the finding of the coroner is drawn up by the members of the jury and forwarded to the parish council or the registrar. In all cases where an autopsy has not already been made by the court or the sanitary authorities, as required by existing regulations, it is within the sphere of the administrative authorities to order an autopsy, whenever this is considered in the public interest.

It is explained that a coroner's inquest must, by law, be held on every still-born child, irrespective of the stage of bodily development; as already stated, however,

¹ In Lower Austria by Proclamation of the Governor-General of the province, dated April 1st, 1922, Z. VI — 58 1/3 Provincial Legal Gazette, No. 93.

only such still-births are entered in the register of births as are developed to viability.

The cause of death stated in the findings of the coroner forms the basis of the mortality statistics.

It is therefore essential that the causes of death should be given by the attending doctors and coroners according to scientific diagnosis and with correct definitions. Doctors are accordingly reminded that, in the certificates of medical treatment and the coroner's reports made out by them, they must state, besides the name commonly used in the country for the disease which is regarded as the direct cause of death, the scientific Latin term, and, in cases in which this disease has developed directly from another disease, they must add the name of the latter, *e.g.*, Bronchitis, *post pertussim*; Pneumonia, *post morbillos*; Septicæmia, *post vulnus scissum*; Tetanus, *post vulnus laceratum*, etc. Special attention must be given to this precise indication of the direct cause of death and of the origin of the cause directly connected therewith, especially in all cases of deaths caused by external violence, also violent external influences of any kind (such as wounding, heat, cold, lightning, electricity, etc.) must always be accurately stated.

In the same way the original cause in deaths from complaints due to alcoholism is to be shown. These statements, made by the attending doctors and coroners in the medical certificates of treatment and coroners' reports, have to be entered in full in the registers of deaths kept by the registrars, who transfer them verbatim from these into column 16 of the registrars' reports presented quarterly. In the arrangement of the statistics, all the causes of death are divided into 25 columns, and the doctors of the administrative districts or of the parish councils, before whom are laid the quarterly lists of deaths, must insert in column 18 the number of those 25 statistical columns in which the cause of death has to be entered. In order to obtain uniformity, an official mortality table has to be used.

The following is the official statistical classification of the causes of death:

1. Inherent vital weakness due to abortion or miscarriage;
2. Tuberculosis of the lungs or other organs;
3. Pneumonia;
4. Diphtheria (croup and diphtheritis);
5. Whooping-cough;
6. Smallpox;
7. Scarlet fever;
8. Measles;
9. Typhus;
10. Typhoid fever;
11. Dysentery;

12. Asiatic cholera;
13. Endemic summer cholera in children;
14. Endemic summer cholera after the childhood period;
15. Puerperal fever;
16. Pyæmia and septicæmia;
17. Other infectious diseases;
18. Contagious animal diseases;
19. Apoplexy;
20. Organic diseases of the heart and diseases of the blood-vessels;
21. Malignant growths;
22. Other natural kinds of death;
23. Accidental injury;
24. Suicide;
25. Murder and homicide;
26. Total number of deaths from natural causes (Totals 1-22);
27. Total number of violent deaths (Totals 23-25).

The lists of deaths, which have to be drawn up quarterly by the registrars, simultaneously with the lists of births, marriages, and of legitimations of children — the two last-named reports do not here come under consideration — together with a file containing the total numbers of children born and still-born among these, and also the total number of deaths of parishioners and non-parishioners (column 15 of the list) entered according to parishes, are to be forwarded to the proper first-grade administrative authorities (district command, *Bezirkshauptmannschaft*, autonomous town) for the first quarter on April 15th, for the second quarter on July 15th, for the third quarter on October 15th and for the fourth quarter on January 15th. The registrars' offices are obliged to complete by return of post any omissions or lacunæ in the entries.

A more detailed record of statistics is compiled by the first-grade administrative authorities.

The official doctors have to make certain official medical notes concerning the health statistics of each circuit (each district command being divided up into a number of circuits to which the different parishes and localities are assigned) or of the whole administrative district or of the territory of autonomous towns. The material for these notes is sent in quarterly by the registrars, and from the notes quarterly or yearly reports on the health statistics are compiled and sent in to the Government not later than a month after the time of delivery fixed for the registrars.

These reports contain the following headings:

1. The circuits in district commands or the name of the autonomous town;
2. Number of inhabitants;
3. Number of marriages;
4. Total number of children born, number of children illegitimate, still-born born with obstetric aid;
5. Deaths, etc., giving age at death:
 - (a) in the first month;
 - (b) in the first year;
 - (c) 0-5 years;
 - (d) 5-15 years;
 - (e) 15-30 years;
 - (f) 30-50 years;
 - (g) 50-70 years;
 - (h) over 70 years.

Then follow the 27 columns, already enumerated, showing causes of death and a column showing the number of medically-certified causes of death and the total number of deaths.

It may be noted that, of the causes of death, No. 17 ("Other infectious diseases"), 18 ("Contagious animal diseases"), 23 ("Accidental fatal injury"), 24 ("Suicide") and 25 ("Murders and homicide"), must be particularly specified, and, under 17, statements must be made regarding deaths from influenza, epidemic cerebrospinal meningitis, poliomyelitis, syphilis, intermittent fever, varicella, tetanus, osteomyelitis, septicæmia, erysipelas, morbus miliaris, pemphigus, trismus neonatorum and furunculosis; under 18, anthrax, echinococcus, trichinosis, distemper; under 23, fatal injuries by drowning, freezing to death, burns, sunstroke, scalds, suffocation, etc., and by poison (acids, lyes, chloroform, alcohol, phosphorus, belladonna, poisonous fungi, lead, etc.); suffocation (carbonic oxide gas, foreign bodies in the wind-pipe, etc.; being buried alive; run over (train, motor, other vehicles), by falls; machines; fire-arms, explosion and explosives; boiler explosions; stabs and cuts; wounds given by domestic animals; beating; lightning and electricity; corrosions; drowning. Under 24, suicide by poison (phosphorus, carbol and lysol, cyanide, potassium, coal-gas, arsenic, carbonic oxide, etc.); hanging, shooting, drowning, falling under a train, jumping down heights, stabbing and gashing, etc.; under 25, death and homicide by poison, beating, shooting, suffocating, child abandonment, child-murder, stabbing, pushing down from a height, drowning, etc.

The Government draws up a statement for the whole province, based upon the reports received from the district commands or autonomous towns; these reports are grouped together on the statement, which at present is sent in every quarter to the Health Ministry as a comprehensive report on the health conditions of the province.

The annexes (lists, files and reports from districts or towns) are sent to the Federal Statistical Office, which has to complete the compilation of the statistics. The Ministry of Health issues in its official publications a preliminary general survey of the health conditions in question; the last one issued was for the second quarter of 1921.

3. STATISTICS OF BIRTHS AND DEATHS FOR VIENNA:

The present Federal Province of Vienna, formerly the Imperial and Royal capital, has since the year 1863 possessed a special statistical office, which formerly published special weekly and monthly reports, giving details regarding births and deaths within its territory. The "Municipal Year-book," which appeared annually up to the year 1914 inclusive, contained a scientific account of all the facts for the year on this subject. The weekly and monthly reports appeared, though not regularly, until the end of 1922. Since 1923 a series of "Supplements to the Statistics of Vienna" have been published at irregular intervals, containing statistical data on births and deaths for the current periods, arranged according to weeks and months, and also a more detailed account for the year 1922.

As compared with the general statistical record of births and deaths, which is also furnished officially by Vienna, the special statistics of the City of Vienna itself show the following dissimilarities. The registrars are obliged to send in weekly (from Sunday (date) till the following Saturday (date) inclusive) to the Municipal Statistics Department, summaries showing the number of children born alive in that week, entered separately in the birth registers according to sex and legitimate or illegitimate parentage. In the case of plural births, as already mentioned, the number of children born is given and not that of the births. The former are entered separately in the appropriate column, according to sex and parentage.

Still-births are taken from the coroners' lists, a duplicate of which goes to the municipal department and is used in the preparation of statistics, in order to include all data regarding the age of foeti. The heads showing causes of death are not the same as those in the State records, the nomenclature adopted (Bertillon classification) is that fixed by the International Commission which met at Paris in August, 1900, and July, 1909.

The detailed annual survey, which appeared till 1922 inclusive, contained the causes of death divided under the following headings: the consecutive numbers in the upper part of the table-heading refer to the numbers in condensed lists, while those in the lower part of the heading refer to the numbers in the more detailed international lists of causes of death.

I. General Diseases.
Epidemic Diseases.

Year, or last permanent residence. Month of decease, Age, Condition and religion of deceased.	Total number of deaths	Total: Male; Female	1-12												Total	1-19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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	Typhoid fever	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f	m	f

37													13			14			15			13-15			37			16			37																																																																																																																																																																																																																																																																											
Blood-poisoning (Pyæmia and Septicæmia)													Nasal Catarrh and worms													Anthrax													Rabies													Tetanus													Mycosis													Pellagra													Beriberi													Tuberculosis													Pulmonary Tuberculosis													Cerebral Tuberculosis													Other tuberculoses and scrofula													Total Tuberculosis													Rickets													Syphilis													Cancer and other malignant growths													Other tumours													Acute muscular rheumatism													Chronic muscular rheumatism and Gout													Other constitutional diseases													Alcoholism acute and chronic													Other chronic forms of poisoning													Total general diseases												
20	21	22	23	24	25	26	27	28	29	30	31-35	28	35	36	37	39-45	46	47	48	49-55	56	57-59	1-59																																																																																																																																																																																																																																																																																			
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II. Diseases of the Nervous System and of the Sexual Organs.										III. Diseases of the Circulatory Organs.										IV. Diseases of the Respiratory Organs.										V. Diseases of the Digestive Organs.									
17										18										19										20									
Cerebro-spinal meningitis.										37										38										39									
Other inflammations of the cerebral membranes.										60-61										62-63										64-65									
Apoplexy of the brain and softening of the brain.										66-76										67-68										69-70									
Other diseases of the nervous system and of the sexual organs.										71, 78										72-73										74-75									
TOTAL: II. Diseases of the nervous system and of the sexual organs.										76-77										78-79										80-81									
Organic diseases of the heart.										82										83										84									
Other diseases of the circulatory organs.										85-86										87-88										89-90									
TOTAL: III. Diseases of the circulatory organs.										91-92										93-94										95-96									
Acute Bronchitis.										97										98										99									
Chronic Bronchitis.										100										101										102									
Pneumonia and pleurisy.										103-104										105-106										107-108									
Other diseases of the respiratory organs.										109-110										111-112										113-114									
TOTAL: IV. Diseases of the respiratory organs.										115-116										117-118										119-120									
Diseases of the stomach (other than cancer).										121										122										123									
Diarrhoea and Enteritis in children under two years of age.										124										125										126									
Inflammation of the appendix and of the cæcum.										127										128										129									
Hernia and volvulus.										130										131										132									
Hepatic cirrhosis.										133										134										135									
Other diseases of the digestive organs.										136-137										138-139										140-141									
TOTAL: V. Diseases of the digestive organs.										142-143										144-145										146-147									

VI. Diseases of the Sexual and Urinary Organs and their Appendages.										VII. Puerperal Diseases.										VIII.										IX.										X.										XI. Weakness and Diseases of early infancy.										XII.										XIII. Violent Death.										XIV.																																																																																																													
29										30										37																				31										32																				37										37										33										33										37										34										35																				38																																							
Inflammation of the kidneys										Diseases of the female sexual organs										Other diseases of the sexual organs, etc.										TOTAL: VI. Diseases of the sexual and urinary organs and their appendages.										Infectious puerperal diseases.										Other diseases.										TOTAL: VII. Diseases of pregnancy and childbirth.										Diseases of the skin and cellular tissues.										Diseases of the organs of motion.										Inherent defects in formation.										Weakness.										Diseases peculiar to early infancy.										TOTAL: Weakness, and illnesses peculiar to early infancy.										Senile decay.										Violent deaths (not including suicide).										Suicide.										TOTAL: XIII. Violent death.										Unknown and insufficiently explained causes of death.																			
119-120										127-133										121-126										119-133										137										134-136 138-141										134-141										142-145										146-149										150										151										152-153										151-153										154										154-156 158										155-156										153-156										157-158										159-160									

The weekly and monthly reports, as well as the yearly reports which are appearing very rapidly, only contain 38 causes of death (so-called petty classification, Bertillon method) under the following heading:

DEATHS according to causes of death.

Total number of deaths (not including still-births)		
Typhoid fever	1	2
Typhus	2	3
Malaria (intermittent fever)	3	4
Smallpox	4	5
Measles	5	6
Scarlet fever	6	7
Whooping-cough	7	8
Diphtheria and Croup	8	9
Influenza (Grippe)	9	10
Asiatic Cholera	10	11
Cholera Nostras	11	12
Dysentery	12	13
Erysipelas	13	14
Epidemic inflammation of the parotid gland	14	15
Other epidemic diseases (1)	15	16
Pulmonary Tuberculosis	16	17
Cerebral Tuberculosis	17	18
Other Tuberculosis (Scrofulous) (2).	18	19
Cancers and other malignant growths	19	20
Epidemic Cerebro-spinal Meningitis (Meningitis cerebrosa)	20	21
Other inflammations of the cerebral membranes	21	22
Apoplexy of the brain, softening of the brain, hæmorrhage of the brain	22	23
Organic diseases of the heart (3)	23	24
Acute bronchitis	24	25
Chronic bronchitis	25	26
Pneumonia and pleurisy	26	27
Other complaints of the respiratory organs	27	28
Diseases of the stomach other than cancer	28	29
Diarrhoea (4 a). Intestinal catarrh (4 b)	29	30
Appendicitis and inflammation of the cæcum	30	31
Hernia and volvolus	31	32
Cirrhosis of the liver	32	33
Inflammation of the kidneys	33	34
Growths and other diseases of the female sexual organs (other than cancers)	34	35
Infectious puerperal fever	35	36
Other diseases of pregnancy and child-birth	36	37
Weakness, inherent defects in formation	37	38
Senile decay	38	
Violent deaths (suicides) (5)		
Suicides (6)		
Other causes of deaths (7)		
Cause of death unknown		

(1) to (7) The relevant footnotes are on the following page.

The statistics of suicide cases published in 1921 is also more detailed than were those for the whole country, as not only are the different kinds of suicide given, but also the alleged motives which led to suicide. These were as follows:

- | | |
|---|---|
| 1. Nerve troubles, addiction to morphia, | 7. Grief over the death of a near relative, |
| 2. Other tedious or incurable complaints, | 8. Wounded honour, |
| 3. Fits of insanity, | 9. Grief from other causes, |
| 4. Other mental derangement, | 10. Grief without visible cause, |
| 5. Drunkenness, | 11. Fear of punishment, |
| 6. Love troubles, jealousy, | 12. Moral lapse, |

Footnotes to the table on the preceding page :

Attention is especially drawn to the following remarks :

(1) Deaths from relapsing fever (*Febris recurrens*), Purpura (miliary fever), yellow fever (*Febris flava*), Plague (*Pestis*), Leprosy (*Lepa*), German measles (*Rubeolae*), chicken-pox (*Varicella*) m..... f....., of sausage and ptomaine poisoning; m..... f.....

(2) Deaths from scrofulous complaints, m..... f.....

(3) Deaths from other diseases of the circulatory organs, m..... f.....

(4a) Children under two only.

(4b) Deaths of children under two from dysentery, m..... f.....

(5) Including (a) *Murder and homicide* : by poisoning, m..... f.....; beating, m..... f.....; shooting, m..... f.....; stabbing, m..... f.....; strangulation or throttling, m..... f.....; drowning, m..... f.....; opening of the jugular vein or cutting of the arteries, m..... f.....; (b) *Other violent deaths* : Accidental fatal injury, m..... f.....; (c) Found drowned, m..... f.....

(6) *Suicide* by poisoning (and with corrosives), m..... f.....; Suffocation (carbonic oxide gas), m..... f.....; coal gas, m..... f.....; hanging, m..... f.....; drowning, m..... f.....; falling, m..... f.....; severing of the arteries or the jugular vein, m..... f.....; crushing, m..... f.....

(7) In this category the deaths were as follows :

1. *Traumatic and infectious diseases* (not including erysipelas), phlegmon of all kinds, lymphangitis, pyæmia, septicæmia, tetanus (apart from maternity cases), gangrene nosocomialis, m..... f..... further
2. *Other infectious diseases* [exclusive of malaria, influenza (grippe), febris recurrens, meningitis cerebrospinalis (epidemic cerebro-spinal meningitis) and of the diseases mentioned under (1)]. Syphilis (Lues), m..... f....., then
3. *Contagious animal diseases*, viz.: Rabies, anthrax, malleus, trichinosis echinococcus, actinomycosis, cysticercus, etc., m..... f....., encephalitis, m..... f..... In Vienna a special statistical record is devoted to mortality from tuberculous disease, child mortality up to five years of age and infant mortality. As regards this last category, the method of feeding nurslings is taken into account; it is clearly shown whether the infant was of legitimate or illegitimate parentage and whether it was fed on the mother's milk alone, on mother's and fostermother's milk, animal milk, substitutes, or mixed food, or if it died without nourishment.

13. Bad school reports,
14. Disinclination for military service and fear of being accepted,
15. Loss of position (dismissal from service or fear of dismissal),
16. Unemployment, destitution,
17. Bad state of business and precarious circumstances,
18. Precarious family conditions,
19. *Tædium vitæ*,
20. American duel,
21. Unknown.

The statistics of accidental deaths — when no second person is to blame (accidents) — were worked out in great detail in Vienna.

VII. THE CENSUS.

The census is taken in conformity with the Law of March 29th, 1869 (Imperial Legal Gazette, No. 67). An inventory of the most important useful domestic animals has also to be taken at the same time. Under the former Monarchy a census took place every 10 years, the last one being taken on the appointed date, December 31st 1910. Under the Republic of Austria, however, the Law of October 21st, 1919 (State Legal Gazette, No. 486), and the Order of the Ministry of the Interior and of Education, dated December 4th, 1919 (State Legal Gazette, No. 548), enacted that in addition to the ordinary census required by the Census Law at the end of 1920 an additional census should be held throughout Austria, with a limited number of questions. This census was made on the day appointed, January 31st, 1920. In one part of Lower Styria and in the southern polling districts of Carinthia the census could not be taken, as those parts of the country were then under Jugo-Slav occupation. A census had therefore to be taken later, when this obstacle no longer existed. The census was not carried out in the frontier districts of Lower Styria until December 15th, 1920, in certain parishes in June 1921, and in the southern Carinthian polling districts on January 31st, 1921. The Burgenland, which at the time had not yet been incorporated, could not be included in the census.

The results of the additional census, together with the supplementary lists, were published in No. 7 of "Beiträge zur Statistik der Republik Oesterreich", by the Statistics Central Commission (now the Federal Statistical Office).

The only tables published were those under the following headings:

1. Houses, tenants and population, according to sex.
2. Population of large and small villages (over 2000 inhabitants).
3. Population (both sexes), present at the time, according to age.
4. Groups of persons arranged according to sex and age in decades.
5. Important age groups.
6. Population present at the time, according to size of family.
7. Size of family arranged according to stages of life.

The appendix contains a few figures showing members employed in various occupations in the different provinces, and also the number of unemployed in the different districts.

The experiment made in taking the additional census, to leave it to the population themselves to make the entries in the — necessarily very simple — classification of professions given, by affixing marks in the proper columns of the census papers, did not prove successful.

On the appointed day, March 7th, 1923, a census was taken of the population in the entire Republic of Austria, together with an inventory of the useful domestic animals (horses, cows, oxen, mules, asses, goats, sheep, pigs, hives of bees, poultry).

A rough draft of the results of this census of the inhabitants, and of the number of Federal citizens, has already been issued. It will, of course, be revised, but will not be corrected to any considerable extent.

VIII. INFECTIOUS DISEASES.

1. NOTIFIABLE DISEASES: INOCULATION.

Some considerable space must be devoted in the present work to a description of the measures taken to combat contagious diseases, as these measures are the most important part of all systems of health legislation, and more especially because the questions involved vitally affect neighbouring States also.

Under the Law of April 14th, 1913 (State Legal Gazette, No. 67), regarding the prevention and methods of treating infectious disease — a law which is the fruit of years of preparatory labour and of expert opinion, and is based on a number of preliminary schemes — it was announced that notification was compulsory in the case of the following diseases:

1. Scarlet fever.
2. Diphtheria.
3. Enteric fever.
4. Dysentery.
5. Epidemic cerebro-spinal meningitis.
6. Puerperal fever.
7. Typhus.
8. Smallpox.
9. Asiatic cholera.
10. Plague.
11. Relapsing fever.
12. Leprosy.
13. Trachoma.
14. Yellow fever.
15. Anthrax.
16. Glanders.
17. Rabies, and bites from animals infected, or suspected of infection, with rabies.

Tuberculosis and syphilis are not included in this list, as it is obvious that the chronic and, to a certain extent, latent diseases call for special legislative treatment. Apart from these, however, infantile spinal paralysis and other diseases, such as malaria, influenza and rhinoscleroma are also omitted, so that, in the light of the present state of our knowledge of the epidemiological importance of many diseases, there appear to be considerable lacunæ.

Provision for this need is made, however, in paragraph 1 of the above-mentioned law, in which powers are given for the express purpose of making such diseases compulsorily notifiable if they arise under forms or in circumstances — particularly in health resorts, institutions and boarding schools — which give grounds for believing that they will assume dangerous proportions or may spread further afield.

In 1913, therefore, in virtue of the Decree of the Provincial Governor of Carinthia, dated September 9th, 1913 (No. 16354), spastic spinal paralysis in infancy was made compulsorily notifiable in Carinthia, as was malaria in Lower Austria by a Ministerial Decree of December 17th, 1917 (State Legal Gazette, No. 490), and, in 1920, relapsing fever in the case of malaria patients who had returned to their homes (publications of the National Health Office, No. 3, page 99, 1921); by a Decree of the Tyrol Government of March 29th (No. VI, 386/2) erysipelas was made compulsorily notifiable in the Tyrol, and, in 1920, influenza in Vienna by a Regulation of January 18th, 1920 (Staat

Legal Gazette, No. 36). In the same way, in the Epidemics Law and the supplementary law published on February 17th, 1920 (State Legal Gazette, No. 83), regarding modifications in the prevention and treatment of infectious diseases, provision is made for the passing of any important health measures, such as inoculation, which may be necessary if delay is dangerous. By this means any omissions in the Epidemics Law, which, for example, does not make preventive vaccination against smallpox compulsory, may be remedied. Thus, apart from the general compulsory inoculation carried out in Vienna in 1917, a Decree, dated June 15th, 1923 (No. 35267), was issued by the National Health Office in agreement with all the Ministries concerned, making varicella compulsorily notifiable in the Vorarlberg, Tyrol and Salzburg, and by a Decree dated June 11th, 1923 (No. 34941), compulsory inoculation was ordered for the population of these provinces, in order to cope with the danger of the introduction and spread of smallpox from Switzerland. Further, public vaccination against smallpox was decreed, to be carried out at vaccination centres, and also re-vaccination was ordered in the national schools of the Burgenland by a Decree of the Burgenland and Provincial Government, dated April 4th, 1922, Nos. 29-94 (Provincial Legal Gazette, No. 100). Lastly, it is especially important that, in many cases, the granting of places in institutions, and also scholarships and posts — particularly Government posts — should be conditional upon the production of an inoculation certificate, and also that inoculation should be made compulsory in the Army.

Mention must also be made here of the State Institute for Serum Production at Vienna, which has acquired an international reputation through the remarkable researches carried out by its head (variola tests for smallpox diagnosis, etc.). It is the duty of this institution not only to provide all the serum required for regular public subcutaneous inoculation in the Federal provinces, but also, in virtue of the Decree of the Ministry of the Interior, dated January 15th, 1894 (No. 30544 *ex* 1893), to supply the necessary quantities of lymph for vaccination in an emergency such as an outbreak of smallpox. The high productive capacity of this institution was manifested as far back as the autumn of 1907, on the occasion of the smallpox epidemic which broke out at Vienna. At that time, during the period August 20th to September 30th, the quantities supplied amounted to 76,094 tubes of lymph, or 521,130 vaccinations. This institution also proved fully capable of meeting the extensive requirements during the war, as will be seen from the fact that during the period from August 1st, 1914, to the end of April 1915 alone, lymph sufficient for 9,055,895 vaccinations was supplied, as compared with 7 or 8 millions in normal times. This institution also supplies a great deal of smallpox vaccine for foreign countries.

I am glad to be able to state that the first steps have now been taken towards the introduction of a Vaccination Law decreeing compulsory vaccination; the recent smallpox epidemic in Switzerland was, to a certain extent, responsible for the taking of this welcome measure, and the final eradication of this disease from our country may now be said to have been begun.

Under the provisions of the Epidemics Law, a Decree was issued on May 5th, 1914 (State Legal Gazette, No. 103), whereby compulsory notification, which was in

force at health resorts, watering-places and summer and winter resorts, in the case of measles (*mobilli*), whooping-cough (*pertussis*), mumps (*parotitis epidemica*), was extended to include institutions and boarding-schools, and was further applied to German measles (*rubeola*) and chickenpox. The police authorities are empowered to name the localities and institutions to which this provision is to apply.

It may be regarded as a special advantage of the Austrian Epidemics Law, as compared with similar laws in other countries, that every case of suspected infection with a compulsory notifiable disease, or any death from such a disease, must at once be notified on a special form, together with the necessary details of the case, to the chairman of the competent municipal council. In this way it is possible to adopt preventive measures in time, even before the diagnosis has been confirmed, and thus the spread of contagious diseases can be prevented without delay.

As regards the shortcomings of the Epidemics Law, it must be noted in particular that the carrying out of works of sanitation (such as water-supply, drainage, etc.) which, as is well known, are of very great value in combating disease, is considerably hampered by the fact that the authorities and public bodies are not bound to take the necessary precautionary measures and dispositions within their sphere of action for the prevention of compulsorily notifiable diseases. Nevertheless, owing to the accommodating attitude of the financial authorities, it has always been possible to place the burden of many of the necessary expenses on the State, and thereby to afford very considerable relief to the municipalities, upon which the law places the task of carrying out the necessary measures of sanitation.

Further, it is expressly laid down in the law that, when disinfection and similar measures are carried out, provision is to be made to compensate artisans, cottagers and in particular all persons not possessing means. Moreover, the State is to provide indemnification — if only on a modest scale — in the case of persons, such as doctors and nurses, if they are rendered incapable of carrying on their profession or lose their life in the performance of their duty.

The following persons are bound to notify contagious diseases:

The doctor who has been called in to the case,

The midwife who has been called in,

Nurses who have been called in,

The head of the household or his or her representative,

Heads of educational institutions in the case of persons placed under their care

The tenant or his or her representative,

The tenant of an inn or licensed house in respect of persons staying or employed on the premises,

The house-owner or steward,

The doctor certifying death,

Lastly, in cases of diseases which can be imparted by animals to human beings, veterinary surgeons.

Unqualified persons are only bound to notify diseases if no doctor is available. Midwives are sometimes able to diagnose, earlier than the doctor, cases of puerperal fever and infectious diseases of breast-fed children. The chairman of the municipal council is bound to report each notification at once to the police authorities: in the case of the diseases in the above list this notification is to be given by telegram, telephone or messenger. If a notification is made under the Epidemics Law, the authority concerned must at once, even if infection is only suspected, institute the necessary enquiries through the doctor placed at its disposal, in order to have the case examined and to confirm the diagnosis.

In order to confirm diagnoses, the Austrian Federal Administration has at its disposal six State bacteriological diagnostic investigation centres, at Vienna, Graz, Linz, Salzburg, Klagenfurt and Innsbruck. It also possesses a number of mobile epidemic laboratories which may at any time be sent by an expert wherever required, in order to carry out on the spot the necessary investigation of the fresh material. Private bacteriological laboratories are not allowed to undertake investigations into cholera, plague and smallpox, and also, for the present, typhus and yellow fever.

The regular foreign information service, which was established in all its essentials by the resolutions of the Paris Health Convention of January 17th, 1912 — to which Austria acceded on April 3rd, 1922 (Federal Legal Gazette, No. 210), under paragraph 15 of that Convention — has proved to be particularly valuable in the campaign against contagious diseases, especially as regards the introduction of such diseases into Austria and the prevention of epidemic outbreaks. In order, however, to improve this inter-State information service, and to facilitate and expedite the timely exchange of useful information, a resolution was passed at the International Health Conference at Warsaw (March 1922) calling for direct co-operation on the part of doctors in inter-State frontier traffic and also emphasising the importance of furnishing sincere and frank reports regarding the condition of infectious diseases, particularly cholera and plague, in each country.

In the case of the infectious diseases referred to under Nos. 1, 2, 7, 8, 9, 10 and 13, the notification must be made by telegram, telephone or messenger.

Apart from conditions during the war period (which introduced typhus among other diseases into Vienna), Austria has happily long remained immune from serious infectious diseases, more especially smallpox, typhus, and cholera, so that the weekly bulletins sent by the National Health Office to foreign States for the most part contain nil returns. Accordingly, reports will in future only be sent if the cases in question occur. In addition, the records concerning all infectious diseases are forwarded every four weeks to as many as 180 addresses.

In order to enable the executive authorities, *i.e.*, the heads of districts, to take the necessary measures immediately on the outbreak of infectious diseases in the frontier zones, the Austrian Federal Ministry for Foreign Affairs suggested a convention to

be concluded with all adjacent States, under which the contracting countries would, in addition to the direct information service, enter into an undertaking to send commissioners into the adjacent frontier zone, if necessary, in order to make personal enquiries and to place themselves directly in contact with their medical colleagues.

In every case of infectious disease, and also in case of suspected infectious disease, the necessary measures for preventing its spread must be taken without delay and appropriate instructions must be published in every commune in the affected area by means of posters and notices in the newspapers. We cannot here give particulars of the measures for the isolation of persons suspected of contagious diseases and of persons who are actually sick. There are available isolation wards, isolation hospitals etc., which are not, however, so far as the smaller communes are concerned, entirely adequate for their purposes.

What would appear more important, in view of the limited resources at the disposal of the State, is the equipment of adequate means of conveyance, to make certain of the transference of infectious cases to appropriate isolation hospitals, of which there are some 86 in Austria at the present date. A Decree, dated February 22nd 1915 (Imperial Legal Gazette, No. 39), gives exhaustive instructions for procedure in regard to isolation, as to the cases in which transference to an isolation hospital should be regarded as essential, and as to the precise manner in which sick persons and persons suspected of sickness and infection should be dealt with, without, however, interfering too much with the rights of the family.

As regards the treatment of carrier cases of permanent discharge, isolation may, under the terms of the above decree, be continued for 10 weeks in all, calculated from the beginning of the illness, and persons affected with these diseases may be placed under a special obligation to notify. The provisions are appropriately more strict in the case of smallpox, cholera, exanthematic typhus and plague. The decree referred to also contains special instructions for the nursing staff, as to the methods of isolation in regard to infectious diseases. Among other important provisions of the Epidemics Law is that of disinfection, though no decree has as yet been issued stating who is responsible for disinfection. It has not yet been possible to discover the measures for making general regulations in regard to this question, so that the disinfection measures issued in the various provinces are carried out by persons who are appointed to carry out this work over and above their official duties.

The system of disinfection is, however, well developed in the larger towns, more especially in Vienna. For instance, the latter city has for several decades been obliged to play the part of a filter safeguarding the West against the onslaught of epidemics from the East, and had accordingly to be armed for the repulse of such diseases. For this obligation was due the considerable expansion in 1908 of the institutions available for this purpose, and the combination of the entire service for combating epidemic diseases into a strong organisation. The disinfection establishment in the Xth District of Vienna, which has been largely extended and is provided with all modern appliances, employs at the present time over ninety trained disinfectors and assistants. Some of the establishments for serving Vienna occupy sites adjacent to the above institutions.

Austria appears to be adequately provided with appliances for disinfection by means of steam and formalin, there being 128 for Vienna, 218 for Lower Austria, 297 for Upper Austria, 33 for Salzburg, 143 for Styria, 37 for Carinthia, 41 for Tyrol, 16 for Vorarlberg and 10 for Burgenland, with suitable stores, a total of 753.

In view of the exaggerated value placed on many disinfection measures and of the observations made in the last few years, a new disinfection order is desirable, which would make suitable allowance for the limited resources at the disposal of the State, whilst fully safeguarding the essential requirements of sanitation.¹ No special reference is required to the provisions contained in the sanitary law for the supervision of persons who run the risk of infection by coming into contact with sick persons, or for closing, if necessary, institutions and baths, and forbidding the sale of food and houses, where the risk of infection is involved.

Similarly, industrial undertakings can also be placed under official superintendence, and the authorities may prevent houses from being inhabited, if such measures are necessary for the protection of the population. Appropriate housing and relief must be afforded to the evicted residents in question, subject to proof of lack of means.

The Ministerial Decree of September 29th, 1914 (Imperial Legal Gazette, No. 263), contained special regulations for the disposal of corpses by persons responsible for notifying diseases; corpses must, in specified cases, be taken direct to the mortuary and be kept out of contact with all unauthorised persons. As regards animals infected with infectious diseases, the Epidemics Law contains a serious defect, in that certain animals, which are of great importance in this connection, such as rats, mice, lice, etc., can only be exterminated at the expense of the State, if the object in view is the prevention of the spread of any given disease. It should be noted in this connection that, in the post-war period, there was an alarming increase in the number of *rats* (this increase was connected with the installation of a large number of food depots in the urban districts), so that a standing notice was published by the National Health Office, in agreement with the Vienna City Health Office, drawing attention to the danger of an increase in the number of rats, especially from the point of view of infectious diseases, describing the habits of these animals, and instructing the population to exterminate them as far as possible in their own districts.

Another clause in the Epidemics Law contains regulations in regard to the movements and registration and also for the supervision of persons who may be regarded as carriers of infectious disease germs. Trading in articles which are considered as disease germ carriers may also be forbidden, in accordance with the Ministerial Decree of May 11th, 1901 (Imperial Legal Gazette, No. 49), or may be made conditional upon specified precautionary regulations. Further, the political authorities are empowered to forbid all intercourse with inhabitants of places where there is an epidemic of plague, cholera or smallpox.

¹ A new decree of this nature, regarding means of disinfection, is already in preparation by Department 8 in the National Health Office, and should be published at an early date. The older law was issued in 1887: Instructions for Procedure in Regard to Disinfection of Infectious Diseases, Ordinance of the Ministry of the Interior of August 16th, 1887 (N^o 20662).

As was noted in connection with the sanitary regulations for railway traffic, further international agreements of a uniform nature would appear to be required for this means of communication, as also for international shipping. As the only waterway controlled by Austria at the present date is the Danube, measures for this purpose may perhaps seem of less importance. However, the active traffic on the Danube offers an opportunity for the importation of infectious diseases, so that in case of occurrence of this nature the regulations in force for ocean traffic would become applicable; this has already occurred once, in 1911, on the occasion of the last cholera epidemic.

Austria at present controls five ports of disembarkation, namely, Hainburg, Vienna, Krems, Grein and Linz, where the prescribed period of from 5 to 10 days, as appropriate, may be passed in quarantine, and infected vessels and cargoes may be disinfected. Further, all other international passenger and goods traffic is regulated by the well-known decisions of the Paris Sanitary Convention of 1912.

If, on the outbreak of an epidemic, it is found that the commune and district doctors available are adequate, so-called epidemic doctors may be appointed; the remuneration of the latter is settled by contract and paid by the State, upon condition that they shall continue to receive their pay in full if they fall sick in the exercise of their duties. An area may be declared infected if the infectious disease in question is whether ascertained by special specific methods of investigation or by the Section assumes such proportions as to involve serious danger to the population. To the executive powers possessed by the commune in regard to the self-governing areas and jurisdiction assigned to it are, according to the character of the infectious disease in question, transferred to the political authorities (the State), the latter taking the measures required from time to time, in addition to employing its medical officers and the above-mentioned organisations.

Under the Epidemics Law the communes are responsible for executing the sanitary police measures in regard to roads and ways, dwelling-houses, canals and drains, running and stagnant water, water for drinking and household purposes, foodstuffs and receptacles therefor, and also for public bathing establishments, with a view to preventing the outbreak of infectious diseases in their self-governing areas. They are also responsible, as has been said, for taking measures to ensure that the necessary assistance can be promptly obtained in cases of sickness. The following responsibilities may also be transferred from the communes to the State:

Enquiries into the outbreak of notifiable diseases;

Isolation of sick persons;

Disinfection;

Exclusion of individual persons from educational establishments;

Restriction of the use of water and similar precautionary measures;

Restriction of the trade in foodstuffs;
Closing of dwelling-houses;
Prohibition of funeral ceremonies;
Measures in regard to corpses;
Extermination of animals as carriers of disease agents;
Closing of educational establishments.

If an epidemic is declared, the above functions are transferred, as has already been said, to the political authorities. The medical officer of the latter is empowered by the Austrian Epidemics Law to undertake any examination of patients, which may appear to him suitable, independently of the doctor attending the case. Disinfectors, too, must be given free access to houses in which there are infected objects. Such measures cannot be stayed as a result of an appeal against any decisions which have been taken.

As regards the compensation, referred to above, for objects damaged by disinfection, this is paid to public bodies, but not to private persons, provided that they have not committed any offence contravening the Epidemics Law. If the damage cannot be adequately ascertained through the proprietor himself, the objects must be valued before destruction by impartial experts. Loss of wages incurred by persons of small means is compensated, as a rule, by the payment of 60 per cent. of the usual daily wage. Claims in this matter must be preferred within 30 days. Further, special regulations to the provisions for the prevention of the loss of wages were contained in the supplementary Epidemics Law of February 17th, 1920 (State Legal Gazette, No. 85): under this all claimants in the position of employees or teachers are entitled to compensation to the amount of the sickness insurance benefit which would be paid by the sickness insurance office for workers in the case of compulsory insurance. All other persons, as stated, receive 60 per cent. of their average earned income.

Mention has already been made of the fact that doctors, who are incapacitated while combating notifiable disease, receive pensions, whilst, in case of their death, their dependents receive allowances. The same applies to nursing attendants and their assigns. Premiums and compensation at the expense of the State treasury are provided for exceptional services during campaigns against infectious diseases. The Austrian Epidemics Law does not contain any provisions for remuneration by the State to doctors on account of their obligation to notify. Failure to notify and report in conformity with the law is punished by a fine or imprisonment. Sums received for confiscated objects and from fines are placed at the disposal of the communes concerned for the purposes of public health.

The sera and bacterial preparations required for the prevention and treatment of infectious disease were, until lately, manufactured at the State Serotherapeutic

Institute, which was founded in 1894 for the production of the diphtheria serum. This institute was established in 1908 in a new building, which serves at the same time for the research, commercial production and sale of biological remedies. Owing to the ever-increasing difficulties of running this establishment on account of the restricted resources of the State, it was at the end of 1922 leased to a limited liability company. The head of the previous State institute, *Professor R. Paltauf*, has been appointed superintendent on behalf of the State. From the point of view of uniform and internationally-conducted epidemics campaign, it would decidedly be desirable that the suggestion put forward by the Health Organisation of the League of Nations for the international standardisation of biological preparations or sera should be carried out as soon as possible.

The State rabies inoculation institute, namely, the Pasteur Institute, is also of importance. Recent experience has again shown the inestimable blessings conferred by this institution in Austria, as in other countries.

A substantial rise in the cases of rabies was noted, more especially in the last two years, so that the services of the Pasteur Institute were increasingly in demand. In agreement with the Federal Ministry for Agriculture and Forestry, muzzling and leashing were made compulsory for dogs, and a regulation was passed that every case of a wound due to a bite should in future be notifiable and that persons bitten, when there was reason to suspect rabies, should be sent for inoculation. Prophylactic inoculation of dogs against rabies can be conducted at Vienna in the Pasteur Institute and in the veterinary surgical schools. A cinema film on rabies, taken at the instance of the National Health Office, serves to enlighten the population.

Notifications of infectious diseases were published weekly by the National Health Office for the entire territory of the Republic of Austria as from January 1st, 1919. There had previously been no such compilation for the entire Empire.

Some mention should be made, if only in brief, of an endemic climatic disease which occurs in some districts of our Alpine lands (in particular, the Tyrol), namely autumnal erythema or trombidiasis, which is caused by the larvæ of the harvest mite *Leptus autumnalis*. This disease has been known among the people for some considerable time, but its nature and the biology of the organism which causes it have only been discovered during the last two years as a result of systematic research. For details on this subject reference should be made to the two remarkable works by *K. Toldt* of Vienna, entitled "Endemic Autumn Erythema in the Schlern District" (*Wiener Klinische Wochenschrift*, No. 34, 1921) and "The Harvest Mite Pest, Trombidiasis in the Schlern District" (*op. cit.*, No. 6, 1923).

This section also includes hitherto unpublished statistics of the cases of encephalitis lethargica observed in Vienna during 1919; in view of the fresh investigations of *Klinger*, *Dörr*, and others, a great deal of light is still required on the etiology and epidemiology of this disease. To these statistics which have been compiled by *H. Hoff*, Assistant at the Vienna University Psychiatric Clinic, we are indebted.

the far-reaching knowledge of the various forms of influenza (grippe) which attack the central nervous system.

Up to the present, no general obligation (*i.e.*, one which applies to the whole Federation) has been imposed as regards the notification of infection with this disease, with the exception of a circular Decree (Runderlass) of the Lower Austrian Provincial Government, dated February 11th, 1920 (Z/G 247/13), which prescribes compulsory notification in Lower Austria in cases of encephalitis lethargica and myoclonica.

It was found necessary to issue a number of decrees — which cannot be described in detail here — regarding sycosis barbi and scabies, which became very frequent in several towns, particularly Vienna, as a result of war and post-war conditions. Moreover, as regards hygiene in trade, further attention was given to the sanitary conditions obtaining in barbers' shops; these, and also the public baths, have not, in our opinion, been sufficiently supervised, and it would be desirable to place them under an international system of regulations.

Although the Austrian Epidemics Law, passed early in 1913, is in many respects incomplete, it has nevertheless given proof of its practical value as a protective against diseases, particularly those liable to be introduced from the East; and during the war, and the post-war period in particular, it has undoubtedly helped to keep Austria free from centres of contagion. It is also satisfactory to be able to state that not only have the State authorities, the military administration, and the autonomous Government and its officials taken a specially conscientious view of their duties, but the population itself has fully realised the significance of these health measures and has given them effective support. The Rapporteur of the recent Health Conference held at Warsaw in March, 1921, was thus able to state that health conditions among the Austrian population are completely and permanently satisfactory, and that no danger need be anticipated from the centres of contagion in the East.

2. TUBERCULOSIS.

The campaign against tuberculosis — which may be regarded as the most important of all epidemic diseases, and (if the expression may be allowed) as a "latent" epidemic disease, especially in civilised countries and more particularly in their most densely-populated areas — may be traced back to *Leopold von Schroetter*. As early as 1833 he endeavoured, while relying mainly on private support, to place on a sound footing the general therapeutics and prophylaxis of tuberculosis. In addition to the creation of the first of the public treatment centres (Volksheilstätten) in Austria — the "Alland Sanatorium" (opened in the year 1898) — propaganda against tuberculosis was also conducted by means of an explanatory pamphlet and posters issued by the Alland Sanatorium Association. Schroetter was also the first to recognise the need of combined international action against tuberculosis, and thus to pave the way

for scientific co-operation among nations, especially in the wide sphere of social hygiene. The work of the Alland Sanatorium Association was taken up in 1905 by the Provident Society for the Prevention of Pulmonary Tuberculosis in the Austria territories, which placed it on a broader basis and developed it on practical lines. "The Principles Governing the Establishment of Treatment Centres" (Hilfstellen) issued by this central organisation acting in connection with the system of dispensaries (A. Calmette), lays down the following general programme of work: visiting of persons suffering from tuberculosis in their homes; treatment and, where practicable, isolation of patients; improvement of living conditions and diet; disinfection of dwellings; instruction of patients, and of those in contact with them, in regard to the origin and danger of home infection and the means of protection against such infection; further the devising and carrying out of protective measures for children and infants in contact with tuberculous persons; the provision of suitable treatment for children already infected, and the earliest possible treatment in the initial stages of the disease.

Among private institutions, mention may also be made here of the Austria Central Committee for the Prevention of Tuberculosis, which comprises all the societies working in connection with this disease and which, by holding eleven "tuberculosis days" (the last one in 1923), has endeavoured to maintain the interest of the public and of the Government in this all-important question and to promote scientific research on special subjects connected with the disease.

Parallel with the private State-aided institutions already mentioned, the State itself has gradually devoted more and more attention to the prevention of tuberculosis and, in the course of the year, issued important regulations on the subject, which now make it possible further to develop and extend the preventive measures against tuberculosis in the Austrian Federal territories. As constituting one of the first measures against tuberculosis, attention must here be drawn to the Decree of the Ministry of the Interior of August 16th, 1887 (No. 20662 *ex* 1886), which lays down, with regard to tuberculosis, that in this disease, as in the case of whooping-cough, articles which have been exposed to contamination by sputum from the respiratory organs shall be disinfected with a solution of carbolic acid. Moreover, certain provinces of the Confederation issued special regulations applicable to health resorts frequented by tuberculous patients, with a view to preventing, so far as possible, the infection of healthy persons. In addition to a Decree on the subject in question issued by the Dalmatian Government and dated December 27th, 1889, mention must be made of the Decree of October 19th, 1894 (No. 7890), which provides for the compulsory notification of all duly authenticated cases of tuberculosis in health resorts, sanatoria, and the disinfection of the premises affected. An Order of the Ministry of Justice, dated November 25th, 1891 (No. 9466), had already made provision against the danger of tubercular infection in prisons, while Decrees of the Ministry of the Interior, of 1890 and 1891, had dealt with reports on the results of the so-called Koch treatment.

In pursuance of a recommendation of the Supreme Board of Health, the Ministry of the Interior issued the Decree of July 14th, 1902 (No. 9949), containing provisions

designed to prevent the occurrence and further spread of tuberculosis, and insisting, *inter alia*, on the importance of microscopic examination of the excreta and on disinfection in the case of the change of residence or death of a tuberculous person. Due stress is also laid upon the danger of indiscriminate expectoration and upon the advisability of prohibitory notices in this connection. The doctor in charge is made responsible for the notification of a case of tuberculosis in a household or community, and, in the event, as already stated, of the death or change of residence of a tuberculous patient. For further particulars reference may be made to the collection of regulations of the Austrian authorities concerning the prevention of tuberculosis, special extract from "Austrian Health Administration", No. 38 *ex* 1907.

As in so many other spheres of public health, the war stimulated legislative action in the prevention of tuberculosis. As a valuable step in this direction may be mentioned the general regulation regarding the establishment of tuberculosis treatment centres, for which provision was made in the Decrees of January 2nd, 1917 (Z. 7461/S. *ex* 1916), and February 16th, 1917 (Z. 1317/S.). The principle of State subsidies for the work of treatment is, moreover, laid down in these decrees. We will pass over the Extraordinary Decrees of the Ministry of the Interior and of the former Ministry of War (Decrees of the Ministry of the Interior, August 20th, 1917, Z. 6022/S. and July 11th, 1918, Z. 4258/S.; and the Decree of the Ministry of War, May 12th, 1918, Art 14, No. 14000), dealing with the treatment of tuberculous service men and their discharge for the purpose of home or hospital treatment. Further practical experience is, however, needed in connection with the differentiation of cases, according as whether tuberculosis is open or not, and in this direction it would appear to be expedient to distinguish between infectious and non-infectious forms of the disease and to take measures accordingly, in particular as regards children, whose age renders them especially susceptible.

Constant attention had to be paid to the question of the compulsory notification of tuberculosis, until the necessity for such action had been thoroughly established in Austria, as in other countries. A provision of this kind involves, of course, financial obligations which may constitute a substantial burden upon the State budget — and this was one of the objections which were at the time advanced against the compulsory notification of tuberculosis. Expenditure in this connection, as, for instance, on isolation, compensation, etc., is, indeed, unavoidable. The Executory Provisions of the State Office of Public Health, dated February 22nd, 1919 (State Legal Gazette, No. 151), and the Decree of February 24th, 1919 (Z. 4775), at present make such notification compulsory, and this may at least be regarded as a step forward in the struggle for the prevention of tuberculosis, a step along a route which has many by-paths.

In accordance with these executory provisions, all cases of infectious (active) pulmonary and laryngeal tuberculosis are notifiable in hospitals or similar establishments, both on admission and discharge; the same principle is applicable in the case of communities of persons, *e.g.*, public institutions, such as prisons and barracks, and those which principally provide accommodation for a long period (boarding-schools,

seminaries, boarding-houses). In the case of individuals, notification is compulsory when there is risk of further tubercular infection. Cases of infectious (active) tuberculosis, within the meaning of the law, are those cases of pulmonary or laryngeal tuberculosis in which the presence of the tuberculosis bacillus has been detected, or in which the patient has been shown by clinical experience to be a bacillus-carrier.

Notification must be made to the communal authorities, whose duty it is to inform the administrative district authorities. The authorities responsible for notification are, in the case of hospitals and similar institutions, the director and, in the case of individuals, the doctor in attendance. Professional nurses are also responsible for notification when attending an infectious case of tuberculosis in which no doctor is in charge, and when there is no available head of the household responsible for such notification.

In regard to the prevention of tuberculosis, the responsibility of the State, as laid down in the Imperial Public Health Law, dated April 30th, 1870 (Imperial Law Gazette, No. 68), is confined to supervision. Practical action is left to the individual provinces, the communes and, in particular, those private associations which are specially engaged in the prevention of tuberculosis.

After these preliminary observations, we will proceed to examine the present conditions of the Austrian institutions designed for the prevention of tuberculosis, beginning with the treatment centres (Heilstätten), which, from an historical point of view, represent the early type of procedure.

At the present moment, the Federal States have at their disposal, in respect of institutions of this kind and convalescent homes for adults and children, 41 institutions with 3980 beds, the largest of which are the institutions in Alland in Lower Austria, Hörgas in Styria, and Grafendorf in Salzburg. Eight of these, comprising 785 beds, are devoted exclusively to the treatment of surgical tuberculosis, especially in children; one institution (at Vienna) for cases of lupus deals with the therapeutics of tuberculosis of the skin. Upon the completion of the Sanatorium for Phthisis at Hochzirl near Innsbruck, the total number of sanatoria in Austria will, in the coming year, amount to 42, comprising about 4,300 beds. The administration of all these institutions is based on private endowment; the local autonomous authorities and the Federal administrative authorities, however, contribute specified sums towards working expenses. As compared with the actual demand for sanatorium beds, the above approximate figure of 4,300 shows a deficit of about 30 %. Empty beds are nevertheless, available in certain institutions at the present moment, in consequence of a shortage of funds which makes it impossible to utilise the full complement. With the extension of the system of health insurance, and as a result of the contributions paid over to the insurance bodies, we may expect, in the near future, not only an increased demand for all the available means of treatment, but also the erection of fresh sanatoria. For example, the Federal Employees' Health Insurance Society has acquired the Hochzirl Phthisis Sanatorium in Tyrol, the erection of which was begun during the war and which lies at an altitude of about 900 metres. Accommodation representing 300 beds has thus been provided for the treatment of tuberculous persons.

similarly, the Commune of Vienna has in view the erection of a large phthisis sanatorium in the outlying suburbs of Vienna, to enable it to cope more easily with the special demands made upon it, having regard to the fact that it has at the present time only some 500 available beds in the various private sanatoria for phthisis.

As regards the beds for internal and surgical tuberculosis in public hospitals, for which the demand is almost continuous and, indeed, at times in excess of the supply, the Federal States have at their disposal some 4200 beds, of which Vienna has 2150, Lower Austria 510, Upper Austria 290, Salzburg 115, Styria 860, Carinthia 120, Tyrol 140, Vorarlberg 10 and Burgenland 20. Of this number, 600 are in private hospitals.

The work of treatment, which is of great importance from a prophylactic point of view, was still further developed (in so far as concerns State action) by two Decrees of the Ministry of the Interior (dated August 7th, 1916, Z. 7582/S and March 28th, 1918, Z. 2387/S.), regulating the whole system in question. The aims which find expression in these decrees, as well as in the previously-mentioned Decree of January 2nd, 1917 (Z. 7461/S. *ex* 1916), had their source in an official enquiry instituted by the Ministry of the Interior in May 1916 and addressed to all parties interested in the anti-tuberculosis campaign. The enquiry led to a report, drawn up at a meeting of this 'Health Committee' on June 23rd, 1916, in which special stress was laid on the necessity of pressing for an extensive development of the work in connection with the care of the family, as constituting the most important of all tasks. In this way the care of tuberculous persons was developed on systematic lines, and limits were set to the responsibilities devolving upon doctors. The following are advocated as the most appropriate measures: instruction, isolation within the home, removal to a sanatorium, removal of children in danger of infection, supervision by an institution for the care of tuberculous persons, etc.

In particular, the last-named decrees urge the provincial Governments, within their own sphere of competence, to promote the institution of treatment centres for tuberculosis which may serve as centres for the isolation of patients, as far as is practicable, and arrange for the classification and distribution of patients in special hospitals according to the nature of the disease. Special attention is paid to the training of health visitors and to the provision, on the one hand, of convalescent homes and, on the other hand, of nursing homes for advanced cases, in sufficient numbers to meet the need.

In consequence of the stimulus given by this action of the administrative authorities, supplemented and strongly supported by voluntary effort, care-work in connection with tuberculous persons in Austria expanded so largely that the Federal provinces, as a whole, have now over 52 centres available, of which Vienna alone has over 13. In the various Federal provinces the duties of the tuberculosis care-work centres are defined, and the allocation of the funds accruing to the centres is carried out by the Provincial Central Authority (*Landes zentrale*), which is in constant communication with the Supreme Health Authority. It is to be understood that the

method of carrying on these centres varies according to local conditions and the different constitution of the population and that the dispensaries in country districts also provide expert medical treatment, whereas the urban centres devote themselves mainly to diagnosis and consultation.

As regards the relation of the area to the staff of the centres, conditions cannot be considered satisfactory. For instance, in Vienna 12 centres (one must be eliminated as serving only a particular sick fund) deal with 21 districts, so that the number of tuberculous persons in need of assistance can only be partially dealt with; thus, for example, the centre which works in the 16th Vienna Communal District has been able to deal with only one-tenth of the cases of mortality from tuberculosis in the district before death. Conditions are still more difficult in the country, where the care centres of certain political districts have to deal with a population of 90,000 persons and even more. Attention has already been drawn to the fact that accommodation especially for advanced cases of tuberculosis, is notably inadequate. It is of all the more importance that the care-work should be directed towards raising the standard of hygienic conditions in the home and to improvising, as it does in the country, courses of attendance at treatment centres. To enter more fully into the question of the financing of the care centres would carry us too far; the question is, moreover, intimately bound up with purely political considerations and with the whole financial position of the Federal State and the provinces. In order to give the reports of the various centres a uniform character, which is important from various points of view a special form is in preparation by the Public Health Office, in which, for example the standpoint is adopted that the care centres are to be regarded as institutes devoted to the cause of public health, to which the tuberculosis-carriers, that is, infectious persons (cases of open tuberculosis), must be known; further, that the families of tuberculous persons must be regarded as the unit for purposes of care, and, accordingly that all members of the family of a patient in an advanced stage of the disease must be examined. The main work of the centres consists, of course, in protection against exposure to infection, while the care of light cases (cases of not open tuberculosis) must take the second place. In this connection, the free examination of the sputum is an important duty of the centres.

As regards legislation, the interests of tuberculous persons disabled in the war were dealt with, from the point of view of treatment and care of health, by the Decree of the Ministry of the Interior dated July 11th, 1918 (Z. 4258/S.). These provisions had, of course, to be modified in accordance with the changed conditions of the post-war period. Cf., in this connection, the Circular Decree of the Provincial Government of Lower Austria, dated February 11th, 1920 (Z. 247/13).

If the measures taken against tuberculosis in Austria are, in consequence of the Federal State's limited resources, of relatively small importance, they are nevertheless conceived in the spirit of the plan of campaign formerly outlined by the International Association for the Prevention of Tuberculosis, which, now that the war is over, are being developed and made effective by the International Union.

3. VENEREAL DISEASES.

State efforts to combat venereal disease also date back to the pre-war period. After the war, and the demoralisation it entailed, it was, however, still more necessary to give careful attention to this question, as a more widespread infection of the population with venereal diseases was to be expected in consequence of the irregular conditions and the often necessitous circumstances of large classes of the community.

These conditions account for the issue (as early as 1918) of a decree on the prevention and combating of contagious venereal diseases, carried into execution by means of an Order of the Austrian Ministry for Public Health of November 21st, 1918 (State Legal Gazette, No. 49). This executive order provided for the compulsory examination and treatment of every sufferer from venereal disease, and for compulsory notification in every case in which, whether owing to his behaviour or other circumstances (*e.g.*, housing conditions) he or she constitutes a danger to those about him.

This order provided more especially for treatment centres for poor persons. The opening of these centres was begun as early as 1918, and was completed in 1919, so that, at the end of 1922, 40 treatment centres, of which 19 were in Vienna and the rest in the provinces, were being maintained out of Federal funds. In contradistinction to the so-called advice centres, which are principally intended to afford complete and permanent treatment for venereal patients by means of efficient instruction, the treatment centres provide free treatment on a most liberal scale — as well as medicines and other necessities — to persons without means. Their work is accordingly direct curative — and consequently of the highest prophylactic — value.

Although a steady decrease in the attendance at the evening treatment centres was noted, for the reason already stated, no reduction was at first made in the number of such centres, and the process of reduction was only begun when the expense incurred appeared no longer worth while compared with the actual work done by many of the centres.

However, in the last half-year (1922) advice and requisite treatment were given to 6460 patients, of whom about 4000 were men and 2000 women, the effect of which was undoubtedly to reduce very considerably the danger of infection.

In consideration of the falling off in the attendance at these institutions and of what appeared to be an actual reduction in the number of persons suffering from venereal diseases, ten treatment centres were closed in the last quarter of 1922 in Vienna, and at present only ten are open. Moreover, the special sections and special clinics in Vienna afford ample facilities for the effective treatment of venereal patients. In the provinces, too, there was no further necessity for so many centres (twenty-one), and, on the demand of the provincial Governments concerned, seven of them were closed on the ground of insufficient attendance.

The authorities realised that, if the special treatment centres and the evening out-patients' departments were to be successful, it was essential to carry on active propaganda work and to give information and popular instruction on the importance

of prophylactic measures. With this object in view, a series of pamphlets on the campaign against venereal disease was published in 1919 in conjunction with the "Austrian Society for Combating Venereal Disease." At the beginning of this year a new edition (No. 42884 of 23/12/1922) was sent to the proper centres for distribution, so that it might be given the widest possible publicity. In a Circular of July 27, 1920 (Z./S. 588/3), issued by the Upper Austrian Government, the importance of the Credé method and its compulsory employment were again pointed out.

The Public Health Office also gives its support to a number of private charitable societies which devote their efforts to the after-care of young persons suffering from venereal disease and which endeavour to help their charges to make a new start in life, or else seek to lessen the existing dangers by combating the traffic in women and children and by instructing young persons as to these dangers.

The "*Austrian Society for Combating Venereal Disease*" deserves to be specially mentioned. Under the direction of Professor Dr. E. Finger, the distinguished investigator in the field of syphilidology, this society has done much to popularise prophylactic measures, and most useful scientific work.

Provision has also been made for medical research work in the field of venereal diseases by developing the State bacteriological-diagnostic and serological examination centres.

Particular mention should be made of the provision in the above-mentioned executive order (see Article 12) for the opening of a special hospital for women suffering from venereal disease and for the establishment of welfare centres for young prostitutes, in which they are given employment and are trained in various trades with a view to enabling them to perform useful work after their discharge. A model institution of this kind has been set up by the Hospital for Women suffering from Venereal Disease at Klosterneuburg, near Vienna. It was opened during the war, and has since been further developed so as to provide the women with the most modern medical treatment and to train them for suitable employments, thus preparing them for a return to a regular mode of life. There are always from 350 to 400 women in the institution. Separate accommodation may be provided for the inmates according to age, origin and, if necessary, character, and they are also permitted to select the form of employment for which they have special aptitudes. Workrooms for sewing (including fancy work), a laundry, book-binding works, a workroom for bootmaking, and plots for gardening are attached to the institution, and, after expenses have been paid, the women receive a proportionate share of the profits to help them in their later career.

It should not be overlooked that a considerable percentage of the patients dismissed as cured from the Klosterneuburg Hospital receive further care and training in the employment centre at Hitteldorf, conducted by the "Charitas sozialis."

Naturally the costs of the institutions referred to — especially the subsidised treatment centres and, more particularly, the Klosterneuburg Hospital — put a heavy strain on the credits at the disposal of the Public Health Office; but despite the precarious condition of the Federal finances, the work has been continued, in order to

everything possible should be done to satisfy these most important social and hygienic requirements.

With a view to examining the opinions held and the measures adopted in foreign countries in connection with the campaign against venereal diseases, and to entering into closer contact with foreign experts and officials engaged in this work, the Public Health Office in the Federal Ministry for Social Affairs gave its adhesion to the "*Union internationale contre le péril vénérien*" and became a member of this union, as a result of which joint action by means of central offices may be regarded as assured in a sphere which is of vital importance to the public well-being of all countries. With this aim in view, the Public Health Office has adopted a suggestion made by the Belgian Government to treat sailors suffering from venereal disease free of charge during their stay in seaports, and has also taken steps — without entering into any obligation in the matter — to enable members of ships' crews who are suffering from venereal disease in the inland ports of Vienna or Linz to obtain advice and treatment at the University Clinic for Syphilidology and Dermatology in Vienna, or in the out-patient's department for venereal cases in the General Infirmary in Linz.

Finally, as regards the question of a special law, a matter which has often been discussed, it should be pointed out that the preliminary work begun in 1918 resulted, after exhaustive discussions, in the drafting of a bill which was put forward by the Austrian Society for the Prevention of Venereal Disease. This bill, however, required very careful consideration in more than one respect. It was feared that it would throw a heavy burden on the State and constitute an encroachment on personal rights recognised by law. For these reasons, the passing of the measure was repeatedly postponed.

After consideration of all the previous *legislative measures* on the subject, including those of other States (Germany, Czechoslovakia), a bill in support or in extension of the executive order already mentioned was prepared in the Public Health Office at the instance of the Federal Ministry of Justice. This bill goes a long way towards meeting the wishes of the above-named society, and also fully recognises the necessity of making as few demands as possible on Federal resources as well as the importance of safeguarding personal legal rights. It provides for compulsory notification and treatment, without exception, in the case of men, and also extends the coercive measures and provisions contained in the penal code to persons failing to observe the terms of the law. This law for the prevention of venereal diseases will probably be accepted by the National Council this autumn.

As regards the question of abolition or control (*i.e.*, the recognition of licensed brothels), opinions still differ in Austria, as in other countries. While the majority of officials recommend abolition, and are overwhelmingly in favour of not going beyond supervision and educative measures, a number of doctors, viewing the matter from the purely hygienic and technical standpoint, advocate the continuation and improvement of the system of control. *Professor E. Finger*, the greatest authority on the subject, leans strongly for abolition and for placing both sexes on the same footing before the law.

4. INFECTIOUS EPIZOOTIC DISEASES.

Veterinary Control.

As an appendix to the sections of this report dealing with the prevention of contagious human diseases, we should like to add a short account of those legislative measures which refer to protection against epizootic diseases, although, as already stated, this is a subject which now comes within the province of the Federal Ministry for Agriculture and Forests and not, as formerly, the Public Health Office.

The decrees in question, consequent upon the Austrian Epizootics Law of 1888, were incorporated in a new general Epizootics Law of August 6th, 1909 (Imperial Legal Gazette, No. 177), regarding the protective measures against, and the stamping out of, such diseases. One of the important provisions of this law is the compulsory notification, in accordance with Article 16, of the following epidemics:

Foot-and-mouth disease;

Anthrax, symptomatic anthrax, deer and cattle-plague;

Pleuropneumonia in cattle;

Glanders;

Smallpox in sheep;

Stallion's distemper and eruption of vesicles in horses and cattle;

Scab in horses, asses, mules, sheep and goats;

Rabies;

Hog cholera (Swine fever);

Swine erysipelas;

Fowl cholera and chicken cholera;

Tuberculosis in cattle which is externally recognisable, as well as those forms of the disease specified in the regulations (advanced tuberculosis of the lungs, of the intestines, of the carrying-sac, and tuberculosis of the udder generally).

There are a number of special decrees for giving effect to this law, *e.g.*, that of October 15th, 1909 (State Legal Gazette, No. 178), but it is unnecessary to give details.

Further, the following laws with regard to pleuropneumonia in cattle or cattle-plague should be mentioned; that of August 17th, 1892 (State Legal Gazette, No. 142), as revised on August 6th, 1909 (State Legal Gazette, No. 182), and particularly the Cattle Plague Law of February 29th, 1880 (State Legal Gazette, No. 3), as revised on August 16th, 1909 (State Legal Gazette, No. 180).

An important Disinfection Law of July 19th, 1879 (State Legal Gazette, No. 13) (in its revised form, dated August 6th, 1909 (State Legal Gazette, No. 184), lays down

gulations for the transport of cattle by rail and sea. It is satisfactory to note that, apart from the inevitable disturbances caused by the war, Austria has suffered little from epizootic diseases. No serious outbreak of cattle-plague has occurred for many years past, so that it has not been necessary to modernise this law to bring it into line with recent diagnostic and therapeutic (serological) methods. Mention need only be made of the sporadic appearance in Carinthia of a few cases of pleuropneumonia in cattle in 1919. The outbreak, however, was easily stamped out and the disease did not spread elsewhere. It should also be stated that cattle farmers in the Austrian Alps, as in other parts of the country, pay great attention to the health of their stock, and possess a thorough knowledge of their work, and that the high standard of training of the local veterinary officials and the subordinate staff enables them to detect promptly the occurrence of contagious diseases and to take suitable prophylactic measures at once.

For the diagnosis of notifiable epidemic diseases, the Federal Ministry for Agriculture and Forestry has at its disposal a Federal centre at Mödling, which is attached to the institute for the preparation of animal vaccines. A private concern, the "Alpine Vaccine Factory" at Graz, which is carried on by the Agricultural Co-operative Society of Austrian Veterinary Surgeons, is also engaged in the same work. Other decrees to which reference may be made are the Decree of the Ministry of Agriculture in agreement with the Ministries of the Interior, Justice, Finance, Trade and Railways of July 18th, 1914 (State Legal Gazette, No. 203), regarding the prevention and suppression of infectious breeding diseases in bees, and, finally, the Decree of the Ministry of Agriculture (in agreement with the Ministries of the Interior and Trade and Railways), concerning the compulsory notification of furunculosis in fish, of February 10th, 1910 (State Legal Gazette, No. 38).

Annual veterinary reports — the last refers to the year 1910 — used to be drawn up; they contained exhaustive statistical lists based upon the material supplied by cattle passports, tables from epidemic diseases, reports and statements on diseases of animals. At present nothing is published except the fortnightly official veterinary reports of the Federal Ministry for Agriculture and Forestry, which give a concise summary of the information forwarded to the Ministry in regard to epizootic diseases in the various Federal provinces. The increasing consumption of raw meat in the form of sausage and so-called Westphalian hams, and the attendant danger of trichinosis, has led quite recently to the issue of a decree containing elaborate provisions for the inspection of meat and the supervision of butchers' shops, etc., by the public health and veterinary police authorities.

Mention should also be made of a Decree of the Ministry for Agriculture and Forestry (in agreement with the Federal Chancellor's Office and the Federal Ministry for Trade and Communications) of June 4th, 1923, concerning the traffic to and from the Republic of Czechoslovakia in animals, raw materials of animal origin, and objects which might carry epizootic diseases. (Federal Legal Gazette, No. 307, *ex* 1923.)

Unfortunately, the Epizootic Diseases Law does not make muzzling compulsory. It can only be enforced by order, the muzzling regulations being left to the acting

District Commissioner. Interesting particulars on the question of the prevention of rabies and the compulsory preventive inoculation of dogs are given in the "Report of the Session of the Society of Physicians" at Vienna, June 8th, 1923, published in the *Vienna Hospital Weekly*, No. 25, p. 451, 1923. It may be mentioned here that in Vienna and other places, the muzzling order has been in force for many years. Furthermore in view of the great increase in the number of cases of rabies last year, the rules for compulsory notification have been made more stringent. Throughout the whole of the Federal provinces all cases of wounds caused by bites from animals which come under the Epidemics Law have to be notified and full particulars given of the position of the wounds, the date on which they were inflicted and the description of the animal (species and origin). The Decree of the Federal Ministry for Social Affairs of April 18th, 1922 (Z. 8093), and the Decree of the Federal Ministry for Agriculture and Forestry of April 23rd, 1922 (Z. 9573), are of special interest on this subject.

5. PREVENTIVE MEASURES AGAINST INFECTIOUS DISEASES,

Sanitation.

As has already been pointed out at the beginning of Section VIII, the sanitation work (water-supply, drainage, etc.), which is of such importance for the prevention of epidemics, cannot properly be described as a duty imposed on the authorities and public corporations by the law on that subject. It has, however, been the practice of the State to allocate considerable sums towards essential sanitation work, and it still contributes, as far as its resources permit, to this work, more especially in the case of the poorer communes.

The solution of the questions of water-supply and drainage in Vienna — service which may be described as excellent in every way — is of especial interest in the history of sanitation in Austria. We shall omit all reference to earlier times, the record of which, as regards the hygiene of the town, is in many respects worthy of note, and begin by mentioning the Danube Canal-water supply of 1841. The installation, however, was entirely unsatisfactory, and was one of the causes of the high rate of mortality from enteric fever in Vienna before the seventies. An immediate change was effected by the construction of the first spring-water supply in Vienna in the year 1873, which brought pure water from the Alps to the city, a distance of over 50 kilometres. The completion of this work marks the beginning of great improvement in the public health of the capital. The rapid decrease in enteric fever mortality in Vienna subsequent to the year 1873 has become a classical example in literature of the importance of wholesome drinking-water. Owing to the steady expansion of Vienna and the incorporation of the suburbs in the municipal district, the first spring-water supply proved inadequate, so that, in the year 1893, it was decided not only to extend it, but to lay down a second spring-water system, which was finished in the year 1900. These two spring-water installations together furnish from 250,000 to 350,000 cubic metres daily. The consumption of water per head is in winter about 120 to 130, and

in summer 180 to 200 litres daily. Twenty-five litres per person are delivered free daily, and it is only for water in excess of this quantity that a moderate rate is levied. In order to reduce the high pressure of the water when it reaches Vienna — a pressure which makes the conveyance of the water into the lower-lying districts a matter of considerable technical difficulty — some of it is used for driving machinery. The quality of the water, however, is not affected by its passing through the turbines. In addition, two hydraulic pumps are connected with the water-pipes, so as to provide against any shortage of the supply due to summer drought. Finally, Vienna also receives water from the Wiental. This water is distributed in the town by means of a network of pipes wholly distinct from the above-mentioned system; it is mainly used for machinery and industrial purposes.

The water-supply and purification systems vary considerably in the different provinces, towns and parishes. After a certain amount of valuable preliminary work had been done, exhaustive enquiries were instituted into this subject by the Ministry of the Interior in the years immediately preceding the war. Those investigations were unfortunately interrupted by the war, the result being that only part of the statistics on water-supply systems in Austria is at present available. The principal data are summarised in a document issued by the Public Health Office on November 1st, 1922, No. 11.

The most striking progress has been made in Lower and Upper Austria and in Salzburg, where the water-supply installations were greatly extended between 1890 and 1894. The other Federal provinces are following on the same lines. As already mentioned, the Ministry of the Interior granted large subsidies for the improvement of public health conditions. The necessity for the allocation of these contributions was decided on the basis of data obtained from the replies to a questionnaire in which were given the reasons for the measures taken by the sanitary and technical departments of the administrative provincial authorities. Undoubtedly, the ever-present danger of infectious diseases accounts for the very considerable amount of work done during the war period in connection with the water-supply and drainage. As a result, conditions are much improved in many districts, although naturally no measures on a large scale could be carried out.

According to A. Svetz,¹ only 48 % of all the communes in Austria with a population of over 2,000 inhabitants are provided with a general water system. In a list of the Federal provinces arranged according to diminishing percentages, Vienna is placed first; then come Tyrol, Vorarlberg, Salzburg, Carinthia, Lower Austria, Styria and, last of all, Upper Austria with only 34 %. In the case of communes with under 2,000 inhabitants, the order is as follows: Tyrol, Vorarlberg, Salzburg, Carinthia, Lower Austria, Upper Austria and Styria. When the percentages of the total population at present supplied with main water are worked out, the order is as follows: Vienna, Tyrol, Vorarlberg, Salzburg, Carinthia, Lower Austria (excluding Vienna),

¹ The work referred to, containing several remarkable tables, appeared in the publications of the Federal Ministry for Social Affairs (Public Health Office), XIX, 1922. F. Deuticke, Vienna and Leipzig.

Styria, and Upper Austria. Including Vienna, 49 % of the total population is supplied with main water. The central water-supply systems in Austria are, almost without exception, owned and worked by public bodies or co-operative societies, and are therefore not carried on as commercial concerns. The geology of the Austrian Federal provinces explains the fact that by far the greater number (573) of the central water supply systems are fed with spring-water and only a small number (52) with ground water. The measures taken to prevent the ground near the springs from being polluted may be regarded as satisfactory.

It need scarcely be added that many of our wells are defective and that here a good deal of work of a sanitary nature remains to be done. Generally speaking, however, unsatisfactory types of wells are rare and in most communes the importance of the question is fully realised.

As regards the disposal of refuse matter, and the sewage system generally, a full report on this subject is also impossible at present. In the year 1909 most places with over 5,000 inhabitants possessed a sewage system. Places with a smaller population had only imperfect arrangements for the disposal of drainage water. An instructive list of the installations set up for the disposal and conversion of sewage is given in the *Austrian Public Health Quarterly* of 1910.

The conditions in Vienna, on the other hand, have been dealt with exhaustively. In that city there are extensive works, which completely satisfy all possible requirements for the regular and hygienic disposal of waste water. We need only mention the regulation and arching over of the river Wien — provided for in the Law dated July 18th, 1892 — and the vast network of waste-water pipes which are connected with large main drains emptying into the Danube below Vienna, the volume of the river being so great that the discharge of the sewage into the stream involves no danger to public health.

The flushing-system is in use in Vienna; the Danube carries off the entire waste water from the network of drains, the total length of which is nearly 956 kilometres. The main drains receive the waste water. Formerly, it was discharged direct into the Danube Canal, and only entered the river (as already stated) at a considerable distance beyond the municipal boundaries. To facilitate this important work, a weir was erected at the outlet of the Danube Canal in Vienna to regulate the water in the canal as required. The incorporation of the communes on the left bank of the River Danube with the municipality, in the year 1905, increased the length of the drainage system by 50 kilometres. The main drains are flushed and cleansed by water admitted from the Danube Canal by means of special sluice gates. Careful attention has been given to the adequate ventilation of the whole network of drains, as may be seen from the fact that there are about 40,000 drain ventilators in, roughly, 43,500 houses in Vienna. The drains are not completely enclosed, but are nearly all covered by gratings which allow sufficient fresh air to be absorbed and circulated. The quantity of waste water in Vienna may be estimated as averaging at present 320,000 cubic metres in 24 hours, so that, on being discharged into the Danube, it undergoes a dilution of over one in four hundred.

6. RAILWAY HEALTH SERVICE.

In view of the fact that it is the aim of the Health Section of the League of Nations to co-ordinate and simplify the public health systems of the various States, it may perhaps not be out of place here to give a brief account of the railway health service. It would, of course, be extremely desirable that there should be a uniform international system, both as regards ambulance work and infectious diseases. The following data refer to the State Federal railway system, which is only part of the railway system of the Austrian Republic, with a length of 5,000 kilometres. Health matters of the whole railway service are dealt with by the Transport Administration Health Department, to which the railway doctors are responsible both in administrative and health matters. As regards numbers, there is, at the present time, on the railways of the Federal States one railway doctor for, approximately, every 10 to 12 kilometres.

As regards ambulance service, the State railway administration has 22 ambulance trains at its disposal, each of which is provided with a large case of first-aid appliances. Similar equipment is, moreover, available at all the principal railway stations, while smaller stations are provided either with smaller first-aid cases or small cases of dressings and bandages. As regards the disinfection of the interior of the carriages, the Federal railway administration has at its disposal its own station at Sussenbrunn, where there is also a steam disinfector for these purposes. Special disinfection chambers for disinfecting all the fittings of a train, such as are to be found in Germany and Holland, do not exist in Austria; nor has the railway administration any delousing stations.

The treatment by the railway authorities of serious infectious diseases, in particular, cholera, is regulated by Instruction No. XXVI for the Public Health Service (Provisional Sections 2 and 3 of the year 1910). Cholera receiving-stations have hitherto been notified as occasion occurred, and, at the present time, notice of them is given by the Federal Ministry for Social Administration (Public Health Office) to the Federal Ministry of Traffic. One of the supplements gives the provisions which were formerly applicable to the whole of Austria and which, after the Peace of St. Germain, were modified in accordance with the changes effected in the frontiers of Austria.

IX. BURIAL REGULATIONS.

That burial should never take place within the 48 hours following death was laid down as early as 1771 (in an Imperial Decree of March 7th of that year). A *Decree* of March 26th, 1797, issued to the West Galician Government, may be quoted here in an abridged form: "Experience has shown that not all persons, who for general reasons are regarded as inanimate, are really dead, but that persons who are apparently dead

often regain consciousness after some hours, and in certain circumstances even recover their health. Whereas it occasionally happens that deceased persons are buried even on the day of, and often only a few hours after, their supposed death, and persons apparently dead are thereby deprived of all means of subsequent recovery. Be it enacted, for the purpose of averting such tragical consequences, that no person shall be buried before the expiry of 48 hours. In cases, however, in which it is shown that death is certain on account of growing putrefaction — arising out of the nature of the disease from which the deceased suffered or from any other cause whatsoever — and if, moreover, a district physician or other qualified provincial doctor or surgeon, summoned for the purpose of inspecting the body, confirm such putrefaction in writing, and hand in such confirmation to the local authorities, the latter may grant permission for burial to take place before the expiry of 48 hours and such burial may then take place. As, however, all such proceedings depend upon the testimony and judgment of the doctor or surgeon, so shall the latter be in every case responsible therefor, and shall be liable to the most severe pains and penalties in any case in which he may give testimony without due caution."

As early as 1771 it was laid down in an Imperial Decree, which is still in force, that mortuaries of adequate size should be constructed adjacent to all churches and that all corpses which could not be left at home should be conveyed there, so that they might be left to lie in the mortuaries until the expiry of 48 hours after death. In order as far as possible to obviate the danger of premature interment, it was laid down that mortuaries should be built of stone, that their windows must be provided with gratings, and the mortuaries themselves with stoves, so as to prevent persons who were only apparently dead from freezing in winter, whilst a plinth 6 to 7 inches high had to be erected above the floor and the coffin placed thereon. Corpses had to be placed in the mortuaries in an open coffin and a cord, connected with a bell in a room in the nearest house, fastened to their hands. If it contained a corpse, the mortuary had to be illuminated at night, whilst the entrance door, which had to be locked on the outside, had to be easy to open from the inside.

Several regulations have been issued for the conveyance of corpses from the homes or from the mortuary to the place of burial, and others of a similar nature for the handling of infected corpses.

A Decree of the Ministry of the Interior, dated May 3rd, 1874 (*State Gazette*, No. 56), lays down rules for the conveyance and exhumation of corpses. Permission for the conveyance and exhumation of corpses is given by the district authorities or municipal magistrates. Burial forms must be made out for the conveyance of corpses.

The conveyance of corpses to and from foreign countries is governed by special conventions, and there are special regulations for the conveyance of corpses by sea. The conveyance of corpses generally, as also for exhumation, is not as a rule permitted unless declared by the medical officer appointed for the purpose as absolutely free from all objections, either from the point of view of public health or of the feelings of any persons concerned therewith. The regulations prescribed for placing

packing corpses in coffins vary according to the duration of the journey; for instance, the corpse may be ordered to be preserved (embalmed) or placed in a double coffin strengthened with girths, etc.

The importation of corpses from abroad for the purposes of university anatomical institutions, and the dispatch of portions of corpses for judicial purposes, are governed by the Ordinance of the Ministry of the Interior of September 3rd, 1893, page 2627, and by the Decree of the same Ministry dated September 16th, 1896, page 7927, respectively.

The only lawful method of burial in the Austrian Republic is inhumation. The practice of cremation, which has been introduced as optional in the province of Vienna, is at present declared unlawful by the Government, though the final decision has not yet been promulgated. No objection is raised to the burial of corpses cremated abroad in the communal cemeteries.

In addition to the inhumation of corpses, the law also recognised the burial at sea of persons deceased on Austrian vessels.

There is a specially appointed sexton at all cemeteries for carrying out burials in accordance with the regulations; he is also responsible for keeping the burial register in a regular manner. He is an important factor in the local sanitary police organisation, as special value must be attached to the credibility of any evidence given by him before the authorities on many questions concerning the management and arrangement of the cemetery. Hence, after instruction in his duties, he is duly attested by the political or municipal authorities and enjoys the rights of an official employed in the public sanitary administration.

Finally, it should be noted that in the Austrian Republic cemeteries are regarded chiefly as sanitary institutions, though as religious institutions also. The State attends to all questions of a sanitary nature; yet its powers are wider, inasmuch as it has enacted that in all circumstances due regard must be paid to the requirements of faith and reverence. A question of greater importance legally is whether cemeteries are or are not under the administration of a particular religious creed (denominational cemetery); in the first case, the cemetery is predominantly a religious institution, while, in the second case, it is predominantly a sanitary institution (communal cemetery); the two types of cemetery are, however, in many ways closely inter-related. The extensions of all cemeteries are subordinate to the ecclesiastical authorities in all ritual and ecclesiastical matters. The cemetery regulations approved by the political or municipal authorities define the powers of the local police and those of the ecclesiastical authorities.

X. TRADE IN FOODSTUFFS.

We have already seen that there are various important points of contact between the tuberculosis campaign, on the one hand, and the campaign for improving the health of infants and children, and the measures to prevent the neglect of children, on the

other. The question of infectious diseases is also in several ways closely connected with the measures for the supervision of the trade in foodstuffs, since (I shall only mention here the etiology of paratyphoid) infectious diseases can be not merely caused, but also spread, by unsound food and drinks.

The trade in foodstuffs in Austria is governed by the Law of January 16th, 1899 (Imperial Legal Gazette, No. 89), promulgated on April 13th, 1897; under this law the State medical officers and similar supervisory authorities, who are appointed for this purpose, after appropriate training (courses of instruction) by the self-governing public bodies (such as the provincial governments or communes), are responsible for supervising the trade in the foodstuffs and luxuries mentioned therein, and also in various specifically mentioned articles in daily use (eating and drinking utensils, wall-paper, artists' colours, cosmetics, petrol). Paragraph 3 of this law defines the powers of the supervisory authorities, whilst paragraph 4 provides for a periodical inspection of businesses handling foodstuffs. Samples of foodstuffs taken by the supervisory authorities are examined in the State analysis institutions. The latter also keep a watchful eye on new foodstuffs and luxuries appearing on the market and, on their own initiative, subject them to analysis. In order to ensure uniformity in regard to the method of inspecting foodstuffs and to obviate discrepancies in statements, more especially in regard to their use for judicial purposes, a Commission met as early as 1891 for the purpose of collating material with a view to laying down a proper definition of foodstuffs and thus paving the way for the issue of a *Codex alimentarius*. After full discussion and the convening of numerous Commissions in which the interests of all the parties concerned were carefully safeguarded, the *Codex alimentarius* was finally drawn up, the first volume appearing in 1901 and the third in 1917, while four supplements have been issued since 1917. This work may be described as a model in all respects; its value has already been recognised abroad.

Owing to the nature of the subject, a large number of laws and special decrees which cannot be further particularised here, have been published in this connection. Sanitary legislation and the police food regulations will, of course, have to be adjusted from time to time to the progress of industry and trade, while the rights of producers on the one hand and consumers on the other must be safeguarded. In Austria there are three State food analysis institutions, of which the most important is that in Vienna, housed in the University Hygiene Institute. Out of a total of 5,352 analyses undertaken in 1922, objection was raised in 2,275 cases.

The food law mentioned above is supplemented, as has already been observed, by special regulations for the traffic in various individual foodstuffs, such as margarine (the so-called Margarine Law of October 25th, 1901, State Legal Gazette, No. 38, *ex* 1902), and for the wine trade (the so-called Wine Law of April 12th, 1907, State Legal Gazette, No. 210). It should be pointed out that these decrees absolutely forbid mixing butter with margarine, and prescribe that margarine must be clearly marked for trade purposes by a special packing. The adulteration of wine and wine must, and descriptions which are intended to conceal the addition of sugar, r

unishable offences. Similarly, the production and sale of drinks which resemble wine — with the exception of fruit-wines, wines made from berries, malt wines and methylin — are forbidden.

The production for trade purposes, and the sale of substances intended for the adulteration of foodstuffs, was specially forbidden in a recent Ministerial Decree of December 16th, 1922 (Federal Legal Gazette, No. 925), supplementing previous decrees of June 16th, 1896, State Legal Gazette, No. 89 *ex* 1897).

The foodstuffs trade is superintended by specially appointed supervisory authorities who, if necessary, are entitled to give orders to destroy unsound foodstuffs. In order to obtain the necessary supply of experts with adequate qualifications, the main bases for the studies and examinations of food experts of this character were laid down in a Ministerial Decree, dated May 24th, 1909 (State Legal Gazette, No. 78), which was based on an older Ordinance, dated October 13th, 1897 (State Legal Gazette, No. 241). Persons desiring to take this qualifying examination must have completed their studies at a secondary school and have spent eight half-year terms at a natural science college; then follow two years' practical work in one of the State food analysis institutions and attendance at two half-year courses, for the purpose of securing the expert's diploma. As was stated above, Austria now has three public institutions for this purpose — one at Vienna, one at Graz and one at Innsbruck — in which, under Ministerial Decree (the last issued was dated August 22nd, 1922, Federal Legal Gazette, No. 595), six-week courses are held for the training of members of the health and food police authority. Permission to take this course is granted only when the earlier education of the applicant has reached a satisfactory standard, the lowest qualification being education at a higher elementary school. The curriculum includes more particularly the inspection of livestock and meat (trichinosis), examination of foodstuffs and luxury stuffs of vegetable origin, a general knowledge of foodstuffs and methods of inspecting the same, and finally the regulations for the foodstuffs trade and the implements and utensils employed in the trade. Another Ministerial Decree, dated August 2nd, 1922 (Federal Legal Gazette, No. 544), contains special regulations as to expert qualifications of officials who are duly entrusted with the supervision of foodstuffs by self-governing bodies, in accordance with the rules mentioned above. In addition, the appointment of lower-grade supervisory officials (market inspectors, etc.) is governed by the provincial laws. It is obvious that in this matter the laws continually require amendment, and that fresh penal provisions must constantly be introduced. Besides the above-mentioned analysis institutions, the Public Agricultural Chemical Research Institution at Vienna and Linz, and the National Wine Research Institute at Klosterneuburg, are also entitled to give expert opinions. All analytical institutions are also bound to undertake examinations and give opinions for private persons: the Ministerial Decree of April 3rd, 1897 (State Legal Gazette, No. 90), set up a permanent Advisory Commission for matters relating to the trade in foodstuffs and to the utensils referred to in the foodstuffs law. The representatives of the above Commission also took an important part in drawing up the *Index Alimentarius*.

XI. TRADE IN DRUGS AND POISONS.

The main lines of the regulations for the trade in drugs in Austria are laid down in the Ministerial Decrees of September 17th, 1883 (Imperial Legal Gazette, No. 152) and of June 17th, 1886 (State Legal Gazette, No. 97), which define the trade of the chemist and demarcate it clearly from that of drysalter and from other similar trades (druggists). The dispensing of medicines on medical prescriptions is explicitly reserved to chemists. All the remedies which must be kept in stock in good condition in public chemists' shops are given in the Austrian *Pharmacopœia* (1st edition, 1729). The latest edition (the eighth) has been amended as a result of various ministerial decrees, and was recently supplemented by the Decree of July 1st, 1922 (Federal Legal Gazette, No. 404). The names in the Austrian *Pharmacopœia* are given in Latin. The sale price of medicines is determined by the regulations for fixing their price which naturally had to be adjusted repeatedly to allow for the fluctuations in the value of money, and which must continue to be so modified. Public institutions enjoy the benefit of special regulations in regard to prescription and dispensing in accordance with the Ministerial Decree of September 10th, 1906, with which doctors and chemists are required to comply in prescribing and dispensing medicines. The fixing of the prices charged for medical prescriptions in public pharmacies is governed by a number of decrees, that of May 19th, 1922 (Z./S. 508/i), dealing with the checking of the prices in the case of Lower Austria.

The trade in and manufacture of patent medicines are regulated by the Decree of Patent Medicines (last supplemented on August 5th, 1922, Federal Legal Gazette, No. 592). Manufacturers of patent medicines must notify the National Health Office, which must decide within three months whether the sale of a medicine may be permitted or not. Appeals are dealt with by an Appeal Commission. A list of the registered patent medicines is published periodically. In order to ensure the supply of medicines required by the country at the cheapest possible rates, a Cabinet Council decision was taken on September 30th, 1919, establishing "the Austrian Pharmaceutical Office" which, as a national economic institution, combines the former Army Dispensing Department and the dispensing departments of the Vienna-endowed institutions, and is especially intended to supply the public health, care and welfare of institutions with medicines and similar remedies. The Pharmaceutical Office has so far given evidence of being an active undertaking. The importation into Austria of medicines of all kinds, and of cosmetics and dietary substances, is regulated by the Executory Instructions of June 20th, 1920 (State Legal Gazette, No. 251), under which articles of this kind may only be imported without licence for pharmaceutical institutions or wholesale drug stores; in all other cases a special permit from the provincial government is necessary.

In the Federal Government's Decree, dated July 12th, 1921 (Federal Legal Gazette, No. 361), the Republic of Austria also gave her adhesion to the Hague Convention of January 23rd, 1912, regarding the traffic in Opium and its preparations.

and in morphine, cocaine and their salts. The specific instructions for enforcing the decree, a duty which is entrusted to the Federal Ministry for Social Affairs (National Health Office), are contained in subsequent Ministerial Decrees, dated July 20th, 1921 (Federal Legal Gazette, Nos. 362 and 363). Certain medicinal preparations, more especially opium, cocaine and their salts, may not be imported freely into Austria; licence from the National Health Office is required in each instance. The exportation of these articles is also, in accordance with the Hague Opium Convention, subject to the foregoing regulation.

The trade in poisons, poisonous drugs and other preparations which are dangerous to health was regulated by the Ministerial Decree of April 21st, 1876 (State Legal Gazette, No. 60), supplemented by the Ministerial Decree of January 2nd, 1886 (State Legal Gazette, No. 101). Permission for the retail sale of poisons can only be given under the special procedure laid down in paragraphs 28, 29 and 30 of the Industrial Regulations. An accurate register of the sale of drugs must be kept by all persons authorised to deal in these substances. Licences are never issued for more than three years. Poisons may only be imported from abroad by traders who are entitled to sell them and by scientific institutions and public educational establishments and, in other cases, subject to a permit granted by a political authority of the first grade. The Customs regulations for poisons are contained in the Executory Instructions of June 20th, 1920 (State Legal Gazette, No. 251).

XII. VALUE TO BE ASSIGNED TO THE AUSTRIAN STATISTICS.

Health statistics, like other statistics, cannot be taken as absolutely correct in all details; they are bound, from a variety of causes, to contain inaccuracies and deficiencies. But we venture to affirm that the Austrian health statistics have a value equal to that of the statistics of other highly-developed countries and that, therefore, they may be taken as a suitable starting-point for the understanding and investigation of existing conditions. Statistics may be defective for the following reasons:

1. Through the failure of the persons concerned to supply the necessary information, *e.g.*, a mother who destroys her child at birth and buries it will neither notify its birth nor its death, nor will a midwife who procures an abortion notify a still-birth; moreover, vagrants and gypsies frequently fail to make these notifications, and infectious diseases which have not been followed by death are frequently not notified, in the absence of medical attendance, and so forth.

2. Through the inability of the authorities to make the necessary entries in the registers, *e.g.*, particulars of persons who have disappeared or are missing, or whose bodies have not been recovered after an accident, are only entered in the register of deaths when the death has been certified in a Court of Law. This may not take place until many years later, if at all; and, moreover, it is possible that the unidentified bodies have been found and the death of these persons registered at the place in which they were discovered. (Double registration.)

The errors arising out of the failure to notify and the impossibility of making up statistical returns at the right time are, however, so insignificant, when compared with the properly notified and registered cases, that they can be completely disregarded especially in cases of birth and death statistics.

The work of registration in Austria gives no ground for complaint, and the persons entrusted with the preparation of the lists are for the most part expert public officials discharging their duties on oath.

As regards the statistics of the causes of death, and of legally notifiable diseases, false diagnoses are possible in so far as they are not checked by a *post-mortem* examination. But in view of the fact that the Austrian medical profession is highly competent, and that its excellence is universally recognised, the number of such false diagnoses in the case of persons dying under medical attendance is insignificant, while persons who have died without medical attendance, and bodies which have been discovered, are submitted to a *post-mortem* examination unless the cause of death is unmistakeable.

All public statistical work, and in particular the census, is carried out with similar care and conscientiousness, and it can therefore be confidently asserted that the mistakes in the statistics of the Austrian Federation or Austrian cities are not of a nature to disturb the accuracy of the details which they provide or to give any ground for mistrust.

Unfortunately, the resources at the disposal of the Federation for statistical purposes are not sufficient to enable it to publish or deal adequately with the material which has already been collected or with the new material which is coming in. In particular, it is again necessary on this account to postpone for the moment such comprehensive plans as the statistical investigations into heredity and the family, which are so important from the medical point of view. Financial aid in this province is highly desirable.

XIII. INDUSTRIAL HYGIENE.

The subject of social insurance and provision for accidents is always closely connected with the question of industrial and occupational diseases. Their legislative treatment in Austria has recently been dealt with by *E. Brezina* (Lectures for health officers organised by the Health Section of the League of Nations, Vienna, April 14th to May 14th, 1923). The legislative basis for the supervision of factories and work is to be found in the Industrial Regulations, with which all subsequent measures including those taken since the war, are related. The legislative measures which are in force in Austria, and the experience which has been gained, are contained in the reports of the industrial inspectors, which have been published with those of other highly-developed countries since 1909 in the yearly reports entitled "International Supervision of Industrial Diseases."

Apart from phosphorus poisoning and the disease to which turners of mother-of-pearl are liable, mention should be made of certain questions of particular importance.

connected with industrial diseases, such as the provisions for the prevention of lead poisoning, which contain many new features, the most recent being found in the decree issued by the Federal Ministry for Social Affairs, in conjunction with the Federal Ministry for Trade, Industry and Construction, and dated March 8th, 1923 (Federal Legal Gazette, No. 183, 184, 185 and 186) (*cf.* Reports of the Public Health Office, Nos. 4 and 30, April 1923), which supersedes previous decrees. The activities of the Austrian factory inspectors during the year 1920 included, in the twenty-five categories of industry, an examination of roughly 63,500 factories, employing 238,000 workers. In these works there were 22,800 accidents and 170 fatal cases, or 0.7 per cent of the total number of accidents notified.

The Berne Convention for the suppression of the use of white phosphorus in the manufacture of matches (September 26th, 1906) has been adhered to by the Austrian Republic and promulgated by the Federal Chancery, in conjunction with the Federal Ministry for Foreign Affairs, on March 23rd, 1921 (Federal Legal Gazette, No. 519, September 16th, 1921).

The more restricted field of the medical treatment of the victims of accidents has been dealt with (in the same publication) by A. Wittek, and in consequence no detailed reference need be made to it here.

Mention should be made of the researches of the Third University Medical Clinic (*Leopold von Schrötter*) in regard to the diseases consequent on atmospheric pressure, which have had a great influence on international legislation in this domain (Caisson workers, divers, aviators — aeronautics, aviation). An ordinance of the Vienna Magistrature (1905) lays down the precautions to be taken where construction work is carried on under abnormal air pressure.

Among recent regulations in the domain of industrial health, reference should also be made to a law, which will shortly be promulgated, supplementing earlier measures and finally regulating night-work in bakeries.

XIV. THE CARE OF THE YOUNG.

1. MATERNITY WORK AND INFANT CARE.

In Austria health work in connection with the care of infants and mothers grew out of the system of foundling hospitals. In the course of its development it was gradually passed from institutional infant care to treatment in public centres. An excellent example of this movement may be found in the development of the Lower Austrian Provincial Foundling Home, which in 1910 became the Central Provincial Home for Children and, after 1922, the Children's Central Home of the City of Vienna. It was primarily intended for the care of mothers, but in course of time care of the children became the main concern, with the result that in 1905 a special section was instituted for the legal protection of children. The "Society

for the Protection of Infants", which established its first care centre and centre for advice to mothers in 1905 at Vienna, has done admirable work. The object of these care centres is to provide medical advice for mothers, to educate them, on sound hygienic principles, in the care and feeding of the infant, and, above all, to encourage nursing by the mother herself. The "Society for Infant Care" at Vienna works on the same lines. During the war special attention had already been paid to the question of illegitimate children, in whose interests the Ministry of Justice, in conjunction with the Ministry of the Interior, issued the Decree, dated June 24th, 1916 (State Legal Gazette, No. 195), providing for public guardianship and confiding to a medical officer of health the responsibility for the regular medical inspection, the supervision and the boarding out of the child. Further steps were taken to promote care work among infants and young children in the Law regarding Sick Persons, dated November 20th, 1919, which lays down that, in confinement cases, the health insurance funds shall give pecuniary assistance, at the full rate of the woman's earnings, for six weeks after confinement, and the payment of nursing assistance at the rate of half-a-day's wage until the end of the twelfth week after confinement. The development of care work in connection with infants and young children was greatly influenced by the establishment at Vienna of the Imperial State Institute for the Care of Mothers and Infants, of which one of the main duties is the practical training of maternity nurses. Under the pressure of necessity, and supported by intensive charitable assistance from abroad, especially by the American Red Cross, the war and post-war periods have undoubtedly tended to strengthen, and largely extend, care work in connection with infants and young children. As regards centres for advice to mothers (with care centres for infants and young children), there were in Austria, at the end of 1921, 11, distributed as follows:

Vienna	41	Tyrol	8
Lower Austria	11	Carinthia	7
Upper Austria	12	Vorarlberg	4
Styria	20	Burgenland	2
Salzburg	5		

The administration, which is partly private, partly State, is placed under a central organisation, the Executive Committee for the Care of Infants and Young Children in Austria, of which the Director of the Public Health Office, some of its officials, and the requisite number of specialists in children's ailments, are members.

2. CHILD WELFARE WORK.

Full attention is paid to the protection of children and the care of young persons — which is of special importance from the point of view of the prevention of tuberculosis — by means of children's homes, convalescent homes, care work among

school-children; school health work, however, in the narrower sense, has not yet been sufficiently developed. In the matter of dental treatment alone have effective arrangements been made, as, for example, at Vienna. Only when the general finances of Austria have been placed on a sound footing and when there has been a considerable increase in the revenues of the Federal State, will it be possible to make further progress in the whole field of care work among young persons.

In conclusion, only Vienna itself has an adequate supply of institutions providing hospital treatment for sick children, while in the country the number of available children's hospitals is insufficient to meet the demand. In particular, there is still a shortage of beds for tuberculous cases, and of reserve beds which may be definitely counted upon in the event of serious epidemics.

The great majority of children's hospitals are private institutions, which at the present time are faced with great financial difficulties, so that the State and the local autonomous bodies will have to meet very serious charges.

3. SCHOOL HYGIENE.

No uniform regulations or State administrative measures have yet been applied, in Austria, to matters relating to school hygiene, although efforts in this direction can be traced back for 25 years, at which date repeated efforts were made, especially by *Dr. Burgerstein*. Nevertheless, in Austria, as elsewhere, the need has been met latterly in connection with the requirements of tuberculosis research and prophylaxis, so that at the present time this branch of social hygiene is being dealt with effectively, although the administration is left in the hands of the local self-governing bodies. Some towns, for instance, Vienna, Graz, Salzburg, possess, as do many large factories — the welfare organisation of the Berndorf Metal Works of the A. Krupp Company in Lower Austria may be cited as a model in this respect — a complete organisation which satisfies the various requirements of an institute of school hygiene, including a dental department and general care work, while, for the rest, there are school medical officers, who are responsible for various parishes (Sprengel) or school districts. Statistics for 1915 may be found in the Reports of the Austrian Society for School Hygiene, No. 21, an organisation which devotes constant attention to questions of this nature and endeavours to promote them in every direction. It was this Society also which issued the first questionnaire. Sufficient attention, however, is not paid in the questionnaire to these factors, a knowledge of which became important during the war for judging the physical state of the child, and which have had a notable influence on the general conditions of nutrition and adolescence. School doctors now take these conditions into account, and a body of well-established data is already available which makes it possible to compare the various ages in respect of height, weight, and chest measurement and to draw appropriate conclusions. The Institutes of School Hygiene are also designed to make doctors familiar with these questions. At Vienna,

where the various departments concerned are centralised in the Municipal Office of Public Health, 41 school doctors — five of these being specialists, six part-time doctors, and 5 women doctors — are employed in this way. Closely allied with school hygiene is the juvenile care work in Vienna, in connection with which there are numerous convalescent centres in places where climatic conditions are favourable.

Connected with these questions are the recent researches and measures relating to goitre, a malady which has been steadily increasing in Austria and even in Vienna and against which we have, adopting the procedure followed in Switzerland, distributed sodium iodide on a large scale to the public. As regards concentration, our schools have been able to supply a salt containing 4 milligrammes of potassium iodide per kilo. It should be noted, from a historical standpoint, that to *Professor Dr. Wagner-Jauregg* is due the honour of having, so long as 25 years ago, constantly drawn attention to the necessity of taking measures against goitre and in particular of supplying sodium iodide.

The first measures against the neglect of children and young persons date back to the first Austrian Congress for the Protection of Children, held at Vienna in 1906, although they did not take legislative shape until after the war. Laws against neglect, dated December 19th, 1918, and February 10th, 1919, regulate the work at school attendance of children and young persons and place foster-children and illegitimate children under the care of State offices of supervision. The most important innovation is perhaps the establishment of offices for juvenile care, whose task it is to centralise the whole work in connection with young persons within a province or within certain communal districts. Greater attention was also paid to youthful delinquents, their claims being met by the Law of January 25th, 1919, regarding the trial of young persons, which provides for the appointment of judges to deal with juvenile offenders. Austria possesses, accordingly, at the present time, a penitentiary for juveniles at Kaiser-Ebersdorf (Vienna). The earlier reformatories were enlarged and proper attention paid to the principles of school hygiene.

4. PHYSICAL CULTURE.

The physical education of the whole population, after school age, is also regarded in Austria as an important prophylactic measure, and careful attention is given to the subject by the health administration. The object of the *Central Institute of Physical Training and Sport*, which is at present being set up, and which is analogous to foreign physical training colleges, is to provide a centre for instruction in and propaganda on this subject. A draft law, which is intended to place on a permanent footing the principle of aid by the State, the provinces and the communes, in connection with expenditure on summer holidays, has been laid before the National Council.

XV. CAMPAIGN AGAINST DRUNKENNESS.

No general statutory regulations have as yet been passed with regard to the questions associated with the campaign against drunkenness. All action in this direction — in Austria, as elsewhere, it has developed extensively — is mainly restricted to propaganda on the part of private associations, the legislature only dealing with this subject to a slight extent and directing its attention chiefly to the protection of the young. Both the socialist and the middle-class political parties are greatly interested in the temperance movement. They have combined to form a number of large unions for combating alcohol and dipsomania, and have a central organisation in Vienna in the "Provincial Head Office for combating Alcoholism." In 1922 the National Assembly voted a sum of fifty million crowns in recognition of the work done by these associations (no small part of the credit for the growth of the anti-alcohol movement is due to *A. Weichselbaum*), to enable them to carry out their practical work adequately with the guidance and support of the National Health Office. An expert adviser also was appointed to the Provincial Office, as hitherto only prohibitionists have been represented, to the exclusion of other persons interested in this matter. It is, however, to be expected that the latter will also obtain adequate representation. A bill for combating alcoholism, which was re-drafted more than a year ago, was again withdrawn and will have to be brought in at a later date.¹

The following regulations have been issued in recent years: Ordinance regarding the prohibition of alcohol with a view to child welfare (State Office for Public Affairs, dated June 21st, 1920, p. 13124); Ordinance regarding the prevention of abuse of alcohol in connection with the supervision of foster-children and illegitimate children (State Office for Public Affairs, dated June 23rd, 1920, p. 13123); Ordinance for combating the abuse of alcohol by means of instruction in schools (Federal Ministry for the Interior and Education, dated September 23rd, 1922, Z.11363/3); Ordinance restricting the sale of spirits to young persons (Federal Law of July 7th, 1922, Federal Legal Gazette, No. 448); Ordinance prohibiting alcohol for school-children in the Burgenland (dated March 31st, 1922, 12-285, Provincial Legal Gazette, p. 93).

There are no special homes in Austria for the treatment of dipsomaniacs. There is, however, a separate department for drunkards in the Lower Austrian Hospital and Nursing Institute, which is in all respects a model establishment.

¹ This bill refers back to the year 1897, and the suggested "Propination Law" (directed against the drinking of spirits in Galicia), which was not adopted. The subject has since been discussed on five different occasions and, in addition, two further demands have been submitted for the introduction of the measure.

XVI. HOUSING AND SETTLEMENTS.

In the past, housing was a question which mainly engaged the attention of the middle classes, whose efforts were merely directed to such matters as the formation of building societies for the construction of cheap dwelling-houses with gardens attached, repayable on easy terms; but, owing to the new problem arising out of the steadily growing housing shortage following the war, the State was compelled to co-operate both directly and indirectly, in the solution of this question. Accordingly, apart from the rapid development of the Schreber garden system, blocks of houses were built, especially in the vicinity of the larger towns such as the suburbs of Vienna, and it was originally intended that the State should assist in this work. The increasing difficulty of the situation, however, called for the creation of an adequate legal basis, and this was provided by means of the Federal Housing and Settlements Endowment Law, dated April 15th 1921 (Federal Legal Gazette No. 252), which was founded on a previous Austrian Ordinance of December 22nd, 1910 (Imperial Legal Gazette No. 242). This law, which includes regulations for the formation and employment of the State Endowment Fund, has been several times supplemented, most recently in the first half of 1923 (*cf.* especially Reports of the Federal Ministry for Public Affairs), fresh resources, such as lottery loans, building grants, etc., being made available for the fund. The regular grants for loans, advances, etc. have hitherto amounted to 52 millions of shillings per annum. No final regulation for the employment of the fund has as yet been issued, but one is shortly to be submitted for approval to the Parliamentary Committee. The main rules for this may be found in the previous regulations attached to the Ordinance of December 22nd, 1910. Up to the present 661 houses have been constructed.

The average number of persons in a "settlement" house may be reckoned at five or six, and they should consist only of members of the same family.

XVII. SOCIAL INSURANCE.

Insurance and public health have a number of points of contact, and the development of the former has led to many necessary improvements of a fundamental nature in Austria. Not the least important of these is the tuberculosis campaign, which has been enormously assisted by the development already referred to. As early as 1859, the Industrial Regulations included compulsory sickness insurance, and contained, in Article 57, special provision for aiding employees in cases of accident or sickness, the employer being obliged, subject to payment of contributions by employees, either to establish an independent assistance fund for his own business or to join an existing fund. The basis of the sickness insurance schemes for workers, in their present form, was laid down in the Law of March 30th, 1888 (State Legal Gazette No. 33), which was supplemented about the middle of February 1923 by 17 additional

clauses and amendments.¹ According to the present wording of this Law, every person employed as a worker, apprentice or domestic servant is insured against sickness. Insurance is effected by means of sick funds which are subject to State control. There are in Austria seven different categories of sick funds — district, agricultural, industrial, building, co-operative and union — in addition to the co-operative aid societies and relief clubs for miners. According to the sick fund statistics, there were, in 1919, 466 of these funds founded in accordance with the law, the members of which numbered about 13 per cent of the entire population on the basis of the 1920 census for the whole of Austria. Of these members, 66 per cent were males and 35 per cent females. The proportion of sick members reached in 1919 about 37 per cent, and the number of cases of sickness about 46 per cent. The average duration of a case of sickness is given as 23 days. The average number of days' sickness per member (morbidity figure), inclusive of maternity cases, amounted to 11, whilst the number of deaths was 1.5 per cent of the membership.

The requirements of accident insurance and compulsory compensation for disablement or death are dealt with in the Austrian Workers' Accident Insurance Law of September 28th, 1887 (State Legal Gazette, No. 1 *ex* 1888), which was extended, as regards miners, by the supplementary Law of December 30th, 1917 (State Legal Gazette, No. 523).

The law provides for compulsory insurance for all workers and industrial officials employed in factories, mines, docks, warehouses, quarries and in works attached to these undertakings. All industrial or agricultural and forestry undertakings in which use is made of boilers or machines (whether driven by steam, electric or other power or by animals), and, in addition, a number of undertakings which involve special danger to persons employed therein, such as, for instance, railways and other transport undertakings, fire stations, theatres, building works, etc., are placed on the same footing for purposes of accident insurance as the above-mentioned undertakings.

Compulsory insurance is extended to all workers and industrial officials employed in any undertakings to which compulsory insurance applies or in any works connected with such an undertaking, without regard to the various risks of accident to which the workers may be liable. In the case of agricultural and forestry undertakings, only those persons must be compulsorily insured who are liable to injury from certain classes of machinery, the use of which in the course of the undertaking imposes the obligation of compulsory insurance.

In addition to compulsory insurance, the Workers' Accident Insurance Law also provides for voluntary insurance.

Owners of undertakings to which compulsory insurance applies may, in accordance with the provisions of the Workers' Accident Insurance Law, insure both themselves and other persons who, although not compulsorily insurable themselves, are liable to the risks involved by such undertakings, whilst proprietors whose undertakings are

¹ New wording of this law in the Decree of November 20th, 1922 (Federal Legal Gazette, No. 859), and Executory Regulations of the Federal Ministry for Public Affairs dated December 27th, 1922 (Federal Legal Gazette, No. 6, *ex* 1923).

not subject by law to compulsory insurance may insure themselves, their workers and industrial officials collectively with the competent workers' accident insurance association. We have hitherto spoken only of territorial workers' accident insurance institutions in general. There is a separate trade accident insurance institution for railway servants. The regulations of this institution differ in certain particulars from the territorial accident insurance institutions; the payments, however, are the same, with the exception that there is no maximum to the payment which may be made in respect of a year's service.

Only miners and employees are insured in Austria by law against disablement and old age. In regard to the first group, there were 34 co-operative aid societies with relief funds in 1919, including a total of about 22,200 members. As regards the second group, employees who are more than 17 years old, provided that they can be said to have the status of officials in view of their employment, or that they perform work mainly of an intellectual nature (education, office work, accountancy, etc.), must be compulsorily insured under the Law of 1906 with reference to the pensions insurance of employees and the relative amendments of 1914. All State employees and officials employed by the provinces and communes who are entitled to pensions, together with doctors in hospitals and sanatoria, are expressly excepted from compulsory insurance under this law. The insurance of the employees specified above is effected by the Austrian Employees' Pensions Institute or by auxiliary institutions. The total number of persons insured in this institute in 1921 was 55,630. The interests of State officials are safeguarded by the Federal Employees' Sickness Insurance Institute, which has steadily developed and now possesses a large number of convalescent homes and sanatoria.

LEAGUE OF NATIONS

HEALTH ORGANISATION

PUBLIC HEALTH SERVICES

IN

GERMANY

BY

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EXPLANATORY STATEMENT WITH REGARD TO PUBLIC HEALTH CONTROL AND THE CHIEF ORGANISATIONS CONNECTED THEREWITH IN THE GERMAN REICH

by

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For the better comprehension of the following statement, it should be explained that, according to the Constitution of August 11th, 1919, the German Reich is a national entity formed by the federation of eighteen States which, so long and in so far as the Reich does not use its legislative power, possess the right of enacting their own laws.

The Chancellor and Ministers exercise the Reich authority over the States represented in the *Reichsrat*. With the co-operation of the Reich Government and the *Reichsrat*, the *Reichstag*, which is composed of the elected representatives of the people, enacts laws for the German Reich within the limits laid down by the Constitution.

This also holds good as regards Public Health Control.

The information for which the Health Organisation of the League of Nations asked is given below in accordance with the questionnaire which was forwarded to me, and which contains a list of the subjects in a certain order designed to serve particular purposes. Otherwise, the subject-matter might perhaps with advantage have been differently arranged.

A. INFECTIOUS DISEASES AND STATISTICS.

(a) Notification of diseases.

1. What diseases are notifiable under central and local laws. ¹

Compulsory notification was established in all the Federal States of the German Reich, by the Law on the prevention of diseases which are dangerous to the public, dated June 30th, 1900, in respect of all cases of or deaths due to *leprosy*, *cholera* (Asiatic), *yellow fever*, *plague* (Oriental bubonic plague), and *smallpox* (including cases of foreign origin). The *Reichsrat* may extend the regulations to include other diseases. Thus,

¹ This and all the following headings are those of the questionnaire dealt with.

notification was made compulsory in the case of *anthrax* by a proclamation of the Chancellor, dated September 28th, 1909.

Prussia established compulsory notification, by the Law of August 28th, 1905 on the prevention of *infectious* diseases, in respect of all cases of or deaths due to *diphtheria*, *infectious cerebro-spinal meningitis*, *puerperal fever*, *trachoma* (granular or trachomatous), *relapsing fever*, *infectious dysentery*, *typhoid fever* (enteric fever) and *paratyphoid*, *glanders*, *hydrophobia* (rabies), and *bites of hydrophobic animals* or *animals suspected of being hydrophobic*, *poisoning by meat, fish or sausages*, *trichinosis* and in respect of all deaths due to *pulmonary* or *laryngeal tuberculosis*.

Under Article 5 of the law, the Ministry of State is authorised to extend compulsory notification temporarily either for a specific area or for the whole country, so as to include other diseases, if and so long as such diseases assume an epidemic character. Temporary regulations regarding notification, investigation and protective measures have, on occasion, been issued in such cases, in respect of acute poliomyelitis (infantile paralysis), whooping-cough, malaria, scabies and measles.

As regards puerperal fever, it should be observed that midwives are obliged, if the temperature of a woman in confinement rises above 38° C., to inform the medical officer of the *Kreis*, who then assumes that it is a suspect case of puerperal fever. The other Federal States (Bavaria, for example, by the Royal Decree of May 8th, 1911) have also adopted similar regulations for the compulsory notification of endemic infectious diseases. It has not accordingly been possible to obtain uniformity throughout the Empire. Thus *suspect* cases of *diphtheria* are notifiable in Lippe; *suspect* cases of *infectious cerebro-spinal meningitis* in Saxony, Thuringia, Waldeck, Schaumburg-Lippe and Lippe; *suspect* cases of *puerperal fever* in Bavaria, Würtemberg, Saxony, Baden, Oldenburg, Brunswick, Thuringia, Waldeck, Lippe and Schaumburg-Lippe; *trachoma* in Hesse, but only in certain circumstances (trachoma is not notifiable in Saxony); *suspect* cases of *relapsing fever* in Bavaria, Würtemberg, Baden, Oldenburg, Brunswick and Waldeck (relapsing fever is not notifiable in Saxony and Lübeck); *suspect* cases of *dysentery* in Bavaria, Saxony, Baden and Lippe and *suspect* cases of *scarlet fever* in Lippe; *suspect* cases of *typhoid fever* in Bavaria, Saxony, Würtemberg, Baden, Oldenburg, Brunswick, Thuringia, Waldeck, Schaumburg-Lippe, Anhalt and Lippe; *suspect* cases of *glanders* in Bavaria, Würtemberg, Baden, Oldenburg, Brunswick, Waldeck and Lippe (glanders is not notifiable in Saxony) and *suspect* cases of *hydrophobia* in Bavaria, Saxony and Würtemberg. Cases of *biting by hydrophobic animals* and *animals suspected of being hydrophobic* are not notifiable in Bavaria, Hesse, Mecklenburg-Schwerin, Mecklenburg-Strelitz, Lübeck or Hamburg; *hydrophobia* and *cases of biting* are only notifiable in Oldenburg in certain circumstances. *Poisoning due to meat, fish or sausages* is not notifiable in Saxony, Hesse, Mecklenburg-Schwerin, Mecklenburg-Strelitz, Lübeck or Bremen; *suspect* cases of such poisoning are notifiable in certain circumstances in Oldenburg. *Trichinosis* is not notifiable in Saxony or Mecklenburg-Schwerin, while even *suspect* cases are notifiable in Lippe; it is only notifiable in certain circumstances in Hesse.

The regulations issued in the various Free States for the notification of diphtheria

infectious diseases are remarkably heterogeneous. *Sycosis barbi* (sycosis parasitaria) is not notifiable anywhere, although it is a serious disease. *Blennorrhœa in new-born infants* is only notifiable in Bavaria, Saxony and Lippe (in Prussia midwives have to report cases of this disease to the medical officer of the *Kreis*). *Miliary fever* is only notifiable in Württemberg. Weekly reports showing cases of *influenza* and *encephalitis thargica* in hospitals have to be sent in to the Ministry of Public Welfare in Prussia. *Whooping-cough* is only notifiable in Bavaria, Saxony, Württemberg, Baden, Hesse and Oldenburg in special circumstances, while in Hamburg it is invariably notifiable. *Infantile spinal paralysis* (poliomyelitis) is notifiable in Bavaria, Baden, Mecklenburg-Schwerin and Mecklenburg-Strelitz, Thuringia, Waldeck and Hamburg, while in Lippe suspect cases also are notifiable; the disease is notifiable in Prussia in special circumstances, and it is notifiable generally in the administrative districts of Potsdam, Frankfurt-on-the-Oder, Arnsberg, Düsseldorf, Cologne, Berlin and Schleswig. *Scald-head* (favus) is not notifiable anywhere; cases of it are, moreover, very rare. *Scabies* is notifiable in Württemberg, but only in certain circumstances. *Paratyphoid* is notifiable in Prussia, Bavaria, Baden, Mecklenburg-Schwerin and Mecklenburg-Strelitz, while in Württemberg and Lippe suspect cases also are notifiable. *Malaria* is notifiable in Württemberg, Brunswick, the two Mecklenburgs (including suspect cases) and Lübeck, and, in certain circumstances, in Oldenburg. *Measles* and *German measles* are notifiable in all cases in Baden, Lübeck and Hamburg, while they are notifiable in Bavaria, Saxony, Württemberg, Hesse and Oldenburg in certain circumstances only. *Mumps* (*parotitis epidemica*) is notifiable only in Hamburg. *Erysipelas* is not notifiable anywhere. *Pemphigus heonatorum* is notifiable in Baden and Hamburg, and suspect cases also are notifiable in Lippe (in Prussia, midwives have to report cases of this disease to the medical officer of the *Kreis*). *Chicken-pox* (varicella) is only notifiable in Hesse. Cases of *worms* (ankylostomiasis) are notifiable in Bavaria, Württemberg, the two Mecklenburgs, Anhalt and Lippe.

Uniformity in this matter is much to be desired, and a Reich law for the prevention of endemic diseases is in preparation.

A (a) 2. *Notification procedure and provisions for diagnosis.*

The regulations which have been issued by the individual States in execution of the Reich Law do not extend notification to diseases other than the *diseases which are dangerous to the public* mentioned in the Reich Epidemics Law, although it would be possible to do so. Detailed regulations for investigation procedure are contained in the Reich Epidemics Law.

Notification procedure.

Notification must be sent to the *police authorities* within twenty-four hours following intimation of the occurrence of a disease. The removal of the patient to another

house or locality must be reported to the police, and, in the latter event, the police authorities of the new place of residence must also be notified. The *notification* must be *made* by : (1) the doctor called in ; (2) the head of the household ; (3) any other person medically attending or in charge of the patient ; (4) the person in whose domicile or dwelling (*e.g.* domicile including workshop, etc., but *not* "house") the patient has fallen ill or died ; (5) the Coroner (*Leichenbeschauer*). The obligation of the persons mentioned under Nos. (2) to (5) only arises if the notification is not made by a person earlier on the list.

As regards cases of sickness and death in public hospitals, maternity homes, convalescent homes, prisons, etc., the head of the institution or the person designated by the responsible authorities is alone responsible for making the notification ; on ships and rafts the master or raftsmen or his deputy is regarded as the head of the household. *Notification*, which can be made orally or in writing, is effected by means of notification *cards*, which are issued free of charge by the police authorities. Doctors reporting cases do not pay postage. The police authorities have to draw up a list for each notifiable disease on the basis of the notifications received.

The police authorities must promptly forward the originals or copies of notifications received by them to the medical officer (the medical officer of the *Kreis*, the district medical officer, the chief public medical officer or the *Physikus*) and report to him the outbreak of notifiable diseases, if they receive intimation of such outbreak in some other way. If the report is made, owing to urgency, by telephone or telegraph, a written statement must also be sent. (Prussian Epidemics Law.)

The individual *notifications* received by the medical officers of the *Kreis* are transmitted weekly on a general *report-card* (*Berichtskarte*) to the "*Regierungspräsident*" (President of the administrative district) who forwards the reports from his district in a weekly return (*Nachweisung*) to the Minister for Public Welfare. A second return of this kind is sent, by agreement, by the *Regierungspräsident* to the *Reich Health Office*. (Three forms for these returns are attached in Annex.) In the case of diseases which are *dangerous to the public*, the *police authorities of the locality* also have to notify immediately the *Regierungspräsident*, if the medical officer declares, in consequence of his investigations on the spot, that there has been an outbreak of the disease, or that there is reason for suspecting an outbreak. The *Regierungspräsident* must immediately inform the *Minister for Public Welfare* and the *Reich Health Office*. These notifications have to be made telegraphically.

The *Reich Health Office* also receives from the State Governments special *weekly returns* with detailed current information on *cholera*, *plague*, *smallpox* and *typhus*, and *daily reports* regarding fresh cases of *cholera* and *plague*, specifying localities and *Kreise*. A special form (*Zählkarte*) must be filled in by the medical officer for each case of *smallpox* or death due to smallpox, and sent either through the competent State authorities, or direct to the *Reich Health Office*, within fourteen days of the recovery or death of a smallpox patient.

As regards *anthrax*, the Proclamation of the Imperial Chancellor dated September 28th, 1909, contains regulations for the statistics of cases of the disease and prescribes

the use of a special form in all States. These forms, which must be filled in by the police authorities, medical officers, the Government inspectors of industry, and, in the case of animals, by public veterinary surgeons, are forwarded by the Regierungspräsident to the *Reich Health Office*.

Special regulations have been issued for the exchange of information between *civil* and *military* authorities under paragraph 3 of Article 39 of the *Reich* law.

II. *Investigation Procedure.*

It is the duty of medical officers, in the case of *diseases which are dangerous to the public* (Reich Epidemics Law, Articles 6-7 and 10), to make immediate investigations on the spot into the nature, extent and origin of a disease (source of infection, etc.), and to inform the police authorities whether there has been a definite outbreak of disease, or whether there are grounds for apprehending an outbreak. In case of emergency, medical officers may undertake investigations without waiting for advice from the police authorities.

In localities of more than 10,000 inhabitants, this regulation must also be observed if cases of disease or deaths occur in an isolated part of the locality which has so far been exempt from the disease.

The higher administrative authorities — “Regierungspräsident”, “Kreishauptmannschaft” (Prefecture of the *Kreis*), “Landeskommissariate” (Federal State Commissions), etc. — may order an investigation into any case of disease or any death. If no such order has been issued, investigations may only be undertaken, after the existence of the disease has been ascertained, in conjunction with the lower administrative authorities, and in so far as may be necessary in order to obtain prompt information both as to the area affected and the duration of the disease.

The medical officer, if he considers that this course of action is necessary to establish the nature of the disease and will involve no injury to the patient, has the right to examine any patient or corpse and is authorised to undertake any analyses which may be necessary for ascertaining the disease. (*Bacteriological analyses* must be carried out immediately in the case of *cholera*, *plague*, *leprosy* and *typhus* — Prussian Ministerial Decree of February 2nd, 1917.) In the case of persons *suffering* or *suspected of suffering* from *cholera*, the suspicion is only to be regarded as unfounded, and the patient as cured, in the event of three bacteriological analyses taken on three successive days giving negative results (Proclamation of the Chancellor of January 12th, 1916). With regard to *smallpox* and *suspected cases of smallpox*, material for analysis must be sent to the Robert Koch Institute for Infectious Diseases in Berlin (Prussian Ministerial Decree of December 20th, 1916). In suspect cases of *cholera*, *yellow fever* or *plague*, an autopsy may also be ordered by the police, if the medical officer regards it as necessary for ascertaining the nature of the disease. (As regards *plague*, a first autopsy may only be conducted by experts specially sent for the purpose, and subsequent autopsies only by the medical officer. [Executive Regulations of the Imperial Epidemics Law]). In dealing with suspected cases of a disease, the same procedure

must be adopted as in dealing with actual cases, so long as the suspicion has not been proved groundless (Executive Regulations).

In localities and districts attacked or threatened by a disease which is dangerous to the public, orders may be issued by the competent authorities for an official post-mortem examination (*Leichenschau*) of all corpses before burial. With regard to *infectious diseases*, Article 6 of the Prussian Epidemics Law lays down that the provisions for investigations contained in the Reich Epidemics Law shall apply to cases and suspect cases of, and deaths due to, *puerperal fever*, *typhoid* (and enteric) fever, *paratyphoid*, and to cases of and deaths due to *cerebro-spinal meningitis*, *relapsing fever*, *infectious dysentery*, *anthrax*, *glanders*, *hydrophobia*, *bites from hydrophobic animals or animals suspected of being hydrophobic*, *poisoning by meal, fish or sausages* and *trichinosis*. If, however, the patient is being treated by a doctor, the medical officer must not examine him if the doctor in charge of the case states that the visit might endanger the health or life of the patient. Moreover, in *cases or suspect cases of puerperal fever*, the medical officer may only visit the patient with the consent of the head of the household. With regard to the latter provisions, which may appear likely to detract from the efficiency of the investigation procedure, it should be noted that objections of the kind are very seldom raised.

An autopsy may be ordered in *suspect cases of typhoid fever and glanders* if the medical officer considers it necessary for establishing the nature of the disease.

The local police authorities are only required to have the first cases of *diphtheria*, *trachoma* and *scarlet fever* medically verified, and these only if they are not notified by a doctor. It should be mentioned that the local police authorities frequently entrust the medical officer of the *Kreis* with the duty of verifying these cases.

The Ministry of State is authorised to extend the provisions with regard to the investigation of diseases, either inclusively or partially and for specific areas or for the whole country, to other infectious diseases than those mentioned in the law, if they occur in an epidemic form. (As soon as such a disease is made notifiable, the regulations regarding compulsory investigations become applicable.)

With regard to the *executive regulations* to the *Prussian Epidemics Law*, it should also be noted that the medical officer of the *Kreis* must immediately make an investigation on the spot into the first case of any of the thirteen diseases which are notifiable in Prussia (see above), *in addition to diphtheria, scarlet fever and trachoma*, and into suspect cases of *puerperal fever* and *typhoid fever*, and must further have a bacteriological analysis made in every case of *typhoid fever, anthrax and glanders*, and, whenever necessary, in cases of the other diseases (more especially *diphtheria, dysentery and cerebro-spinal meningitis*). The occurrence of typhoid fever in a locality may also be definitely certified by special experts (*e.g.*, from a bacteriological institute) sent by the Minister for Public Welfare. In cases of *anthrax and glanders*, the medical officer of the *Kreis* must undertake investigation *in conjunction with the public veterinary surgeon*, who must also be informed of any cases of *poisoning by meal*, if it is suspected that the meat has not been regularly inspected.

An autopsy may only be held in *suspect cases of typhoid fever and glanders*, if

the bacteriological analysis of the secretions and the blood (agglutination) is insufficient for the purpose of determining the nature of the disease, or if, owing to the circumstances of the case, such analysis cannot be carried out.

In localities with more than 10,000 inhabitants in which an epidemic outbreak has already been certified, the prescribed investigations and verifications must be carried out where, owing to the occurrence of new cases of the disease at a considerable distance from the original cases or to variations in the local conditions of its occurrence, the position is equivalent to an outbreak of the disease in two separate, but adjacent, localities. It is advisable that the police authorities in such localities, in conjunction with the medical officer, should in advance trace, in a general manner, the districts in each of which the first epidemic case will be treated in the same way as the first case in the whole locality.

The *Regierungspräsident* may, if the circumstances make it advisable, order investigations to be made into *each individual* case of disease or death. It is advisable that this power should be used in every case of suspect case of, or death from, *puerperal fever*. (In many administrative districts, investigations are generally ordered in *every case* or *suspect case* of *typhoid fever*, *dysentery* and *cerebro-spinal meningitis*, etc.) If no order is issued, investigations may only be undertaken by the medical officer, after the occurrence of a disease has been certified, in agreement with the higher *police authorities* or the rural or urban *Kreis* (the Landrat or the head burgomaster), and only so far as the medical officer may think it necessary, after due consideration, in order to obtain information as to the area affected and the duration of the disease.

Persons who are responsible for notifying must, upon request, supply the medical officers and the competent authorities with all relevant information relating to the outbreak and progress of the disease, in order that the investigation may yield the most exact information possible.

In localities and districts which are attacked by *anthrax*, *glanders*, *dysentery* or *typhoid fever*, and in which post-mortem examinations (*Leichenschau*) are not generally compulsory, the police may, if necessary, order an official *post-mortem* examination (*Leichenschau*) of all corpses, if possible by a doctor, before burial.

The *service regulations for medical officers in Prussian Kreise* contain a further provision. If the medical officer of the *Kreis* learns that one of the non-notifiable infectious diseases, *e.g. influenza, whooping-cough, malaria, measles* or *German measles*, has broken out in any locality on an exceptionally wide scale, in a specially dangerous form, or in some other manner which endangers the public health, he must, if the Landrat or, in urban *Kreise*, the police authorities of the locality give their consent, undertake investigations on the spot without delay, and report the result to the police authorities. The same regulation applies if the medical officer of the *Kreis* learns of the occurrence of an unexplained disease on a large scale or among groups of persons, so as to give ground for suspecting the outbreak of an infectious disease.

Investigations of a wider scope than those provided for in these regulations with regard to infectious diseases may only be carried out by the medical officer of the *Kreis* under instructions from the Landrat or, in urban *Kreise*, from the police authorities of

the locality or the President of the administrative district. The Regierungspräsidenten must select from a list of laboratories and specify beforehand those establishments which are to be used *for the bacteriological determination* of infectious diseases and any further bacteriological analyses which may be necessary as cases occur. The material for analysis must be sent to these institutes as promptly as possible. Information as to the result of the analyses must be sent without delay by the analysing institute to the person forwarding the objects for analysis and, in the event of its being positive to the medical officer also. In this connection, the medical officer must be informed of the address of the patient and the name and address of the doctor forwarding the objects for analysis. (In certain districts it is laid down that the medical officer must also be informed of negative results, for it was found that in some instances doctors after sending in a blood specimen taken before agglutination was possible, failed to notify a case which they suspected but which was not notifiable in consequence of the negative result of the analysis ; the medical officer is now in a position to follow up a suspect case of this kind.)

The Regierungspräsidenten have to make arrangements for suitable receptacles for the objects of analysis to be kept in stock in sufficient quantities in places which must be notified to medical officers and practising doctors (*e.g.* pharmacies), and to be supplied free of charge. Copies of the regulations for the taking and despatch of specimen for analysis must be attached to the receptacles. (These regulations are contained in the Instructions of the Federal Council in the case of diseases which are dangerous to the public, and in the Instructions of the Minister for Public Welfare in the case of infectious diseases.)

Two State typhoid laboratories and ten medical institutes for bacteriological analysis were in existence in *Prussia* in 1920, in addition to the Robert Koch Institute for Infectious Diseases in Berlin and two Hygiene Institutes in Landsberg-on-the-Warthe and in Beuthen in East Silesia. In *Saxony* there are three institutes of this kind controlled by the State, two controlled by municipalities and one private institute.

In connection with the *national typhoid campaign in Central Germany*, for which a Reich Medical Commissioner is responsible, and which is also directed against infectious dysentery, the heads of the five laboratories assist in the work of official verification by undertaking enquiries simultaneously, so far as possible, with the medical officers. The campaign covers the Free State of Thuringia and two neighbouring Prussian administrative districts.

The points to be observed in investigating notifiable diseases are laid down in the Instructions of the Federal Council, or, in the case of Prussia, in the Instructions issued by the Minister for Public Welfare in respect of individual diseases. These Instructions have been collected and published in book form. Article 83 of the Service Regulations for medical officers in Prussian *Kreise* provides that, in the course of his investigations, the medical officer of the *Kreis* shall ascertain the character, extent and origin of the disease (character and manner of introduction and dissemination, transmission by schools, workshops, industrial establishments, drinking-water, foodstuffs, *e.g.* milk, etc.).

The medical officer of the *Kreis* must take into consideration the work of the *Health Commissions*, which were established in Prussia in communes containing more than 5,000 inhabitants by the Law of September 16th, 1899, and which assist in preventing the outbreak or spread of diseases which are dangerous to the public by seconding the measures of the police authorities, inspecting houses, instructing the population, etc.

In many administrative districts, it has proved necessary to draw up special forms for the investigations of the medical officers of the *Kreise*, e.g. forms for each case of typhoid fever (*dysentery*) and *cerebro-spinal meningitis*. Fully detailed investigation forms are also used in connection with the national typhoid (and dysentery) campaign in Central Germany. In other localities lists are employed; they are forwarded four times a year to the *Regierungspräsident* and are then returned, endorsed by him, to the medical officer of the *Kreis*.

A. (a) 3. *What tabulations of cases of the various diseases (weekly, monthly and annual) are made in the Central Statistical Office and in the Ministry of Health? (By locality, by sex, by age? What age groupings are used? etc.)*

In the first place, there are Central Statistical Offices in the Federal States which prepare the statistical material accumulated in accordance with the requirements of the States. The *Reich Statistical Office* co-ordinates the statistics of all the Federal States, in particular with a view to this question of the movement of population (Vital Statistics). No *Reich Health Ministry* has yet been established; but the medical statistics are drawn up by the highest expert Health Authority of the Empire, the *Reich Health Office*, and are published either in the "*Reich Health Office Bulletin*" (*Veröffentlichungen aus dem Reichsgesundheitsamt*) or in the "*Medical Statistical Notes*" (*Medizinalstatistische Mitteilungen*). These publications deal with the following statistics:

(i) Cases of diseases which are dangerous to the community and deaths resulting therefrom are announced every week in the "*Bulletins*" with mention of the manner in which they occurred, their origin and the locality, *Kreis* and district, together with similar cases which have been notified from abroad, in virtue of the Paris International Convention of 1912 (plague, cholera and yellow fever) or other agreements for the exchange of information concluded with various European countries, or which have been noted in official announcements. As there are, happily, very few cases of these diseases in Germany, there is no necessity for the elaboration of a special periodical table.

(ii) In regard to cases of smallpox in the German Reich, the *Reich Health Office* publishes yearly statistics specifying locality, sex and age in the *Medical*

Statistical Notes (and in addition figures in regard to the activities of the German institute for the preparation of vaccines, and a table showing the results of the annual vaccination of children under the Reich Vaccination Law of April 8th, 1874). The smallpox statistics of the Reich have been drawn up on the basis of an annual schedule (see Annex II) for each case — since the year 1886 for fatal cases and since the year 1895 for all cases. The most recent statistics are those of the year 1920 (*Medical Statistical Notes* issued by the Reich Health Office, Vol. 22, 1922). In addition, surveys of smallpox for a period of ten years are published in tabular form (*Medical Statistical Notes*, e.g. Vol. 22, 1922.) As the *Medical Statistical Notes* are sent to the Health Organisation of the League of Nations, I need give no further description of these statistics.

Moreover, a short review of *cases of smallpox* with statistical details is published each year in the "Reich Health Office Bulletins". (The last of these reviews is to be found in No. 5 of the "Reich Health Office Bulletins" for 1923.)

(iii) Cases of *typhus* are also dealt with in the manner just described. (The last review is to be found in the volume mentioned under (ii).)

(iv) The current statistics in regard to cases of *anthrax* (Instruction of the Federal Council, September 28th, 1909) are compiled by the Reich Health Office on the basis of the returns sent in and are published in the *Medical Statistical Notes*. (The last compilation for the year 1920 is to be found in Volume 22 of the year 1923.)

The statistics specify the State, month and sex. In the event of the outbreak of an epidemic of *cholera* or *plague*, the Reich Health Office would also collect the statistics of the disease, specifying, of course, the locality, sex and age, as was done in the fullest detail for the cases of cholera in Gonsenheim and Finten in the autumn of 1886 and for the cholera epidemics in the autumn of 1892, the winter of 1892-93, and during the year 1893 in Volumes 2, 10, 11 and 12 of the "Proceedings of the Reich Health Office" (published by Julius Springer, Berlin) for the years 1887, 1895 and 1896.

Similar detailed statistics have been published by the Reich Health Office in respect of *epidemics of contagious diseases*, as, for example, in the case of *typhoid* (Vols. 20, 24, 30, 41 and 43 of the above-mentioned publication for the years 1904, 1906, 1909 and 1912). Vol. 23 (1906) also gives statistical details in regard to worm disease (ankylostomiasis). Moreover, the great *influenza* epidemics of 1889-90, 1891-92, 1893-94 and 1918-19, are described in detail in Volumes 9, 12 and 53 of the Proceedings for the years 1894, 1896 and 1922.

(v) Information as to the contagious diseases notified by the Federal State in the manner described is given weekly, in a table showing the figures for provinces and districts, at the conclusion of each number of the "Bulletins". This table deals mainly with endemic diseases, but it includes two headings for smallpox and typhus in order that a general idea may be obtained at once as to the extent of these diseases which are often brought to Germany from the East. This table thus supplies a complete review of the position throughout Germany. So far as a regular exchange of information with foreign countries (Russia, Poland, Kingdom of the Serbs, Croat

and S'ovenes, Hungary, Austria, etc.) has been arranged or other up-to-date official information is available, *e.g.* with regard to the larger foreign cities, these data as to the endemic diseases in those countries (including smallpox and typhus) are also included in the table, grouped according to country, administrative district or city. A weekly statement and a regular summary of weekly statements are then prepared for the whole of Germany. The yearly figures of the epidemic diseases notified in the Federal States are subjected in the various *Kreise* to a further revision at the hands of the public medical officers. The results of this revision are then utilised for the final annual calculations of the Reich Health Office. As the "Reich Health Office Bulletins" are sent regularly to the Health Organisation of the League of Nations, no further details need be given here as to the composition of the table, which contains no details concerning age or sex. The table deals only with *cases of sickness*, and only with those occurring among the civil population. Special statistics of sickness in the Army are kept by the military authorities.

(vi) The completion of these figures by the addition of the deaths from epidemic diseases among the civil population of the German Reich is effected by means of the *Statistics of the Causes of Death*, also drawn up by the Reich Health Office; they have hitherto been published in the form of a yearly review in the "Medical Statistical Notes". Deaths due to diseases which are dangerous to the community are reported directly to the Reich Health Office, where the figures may always be consulted.

The material for these statistics is forwarded to the Reich Health Office by the Statistical Offices of the towns and by the Register Offices, on separate registration forms (Annex III). They are based on the birth and death entries of the Register Offices. The last bulletin, which appeared as a special Annex to No. 10 of the "Reich Health Office Bulletins" for 1923 and has been sent to the Health Organisation of the League of Nations, deals with the years 1914 to 1920. It contains figures showing the causes of death in the various German States (for the years 1917 to 1920) among the male civil population, in the Army, and among the female population. A second table gives, both in absolute and relative figures, the main statistics regarding causes of death throughout the German Reich in the years 1914 to 1920, and states the birth figures. A third table gives the average figures of the population in thousands for the German Reich and for its component States from 1914 to 1920, arranged according to sex. The bulletin is only of a temporary nature. A more comprehensive review with comments and detailed tables for 1914 to 1920 is still awaited, on the lines, for example, of those for 1912 and 1913 contained in Volumes 18 and 19 of the Medical Statistical Notes (published by Julius Springer, Berlin). In these volumes deaths due to infectious diseases are divided according to age (in seven categories) and according to sex, and the details have been worked out with the greatest accuracy. Volume 19 has already been sent to the Health Organisation of the League of Nations.

(vii) To obtain information at any time as to the causes of death and the movement of population in the German Reich, at least as regards the most important circumstances and as regards the towns, reference should be made to the Reich Health

Office's provisional current *Weekly Bulletin of Birth and Death Statistics in the 46 German towns containing over 100,000 inhabitants*, and (viii) a similar *Monthly Bulletin of Birth and Death Statistics in 335 German localities containing over 15,000 inhabitants*. The synopsis forms used for these publications differ in that the form for places of over 15,000 inhabitants is shorter. In view of the higher capacity of the statistical offices in the large towns, they can be called upon to elaborate the original material in greater detail ; e.g. deceased persons above the age of one year are divided, in the large towns, into six groups according to age, whereas in the smaller localities all these groups come under the same heading. This distinction in the method of reporting is also observed in respect of the causes of death, which are divided into 24 categories with four sub-headings in the large towns, whereas in places of over 15,000 inhabitants they are only divided into 15 categories with two sub-headings. In the case of deaths resulting from infectious diseases, however, both forms contain the headings : puerperal fever, scarlet fever, measles and German measles, diphtheria, whooping-cough, typhoid, contagious dysentery, tuberculosis and influenza.

(ix) With a view to comparison with the *larger foreign towns*, a *weekly summary of birth and death statistics* in some of these towns, e.g. in Danzig, Warsaw and certain towns in England, the Netherlands, Italy, the United States, etc. is included in the Bulletins. The table includes the nine headings mentioned above in regard to deaths from contagious diseases, with the addition of six causes of death not of an infectious nature. Deaths of infants under one year of age are not included.

As regards the further details of these three classes of statistics dealing with towns (vii, viii, ix) reference should be made to the tables themselves, which have been sent to the Health Organisation of the League of Nations, e.g. in No. 2 and No. 12 of the "Bulletins" for 1923.

(x) Finally, mention should be made of the *Statistics of the Health Establishments of the German Reich*, published every three years by the Reich Health Office. As regards the question before us, this publication shows how many persons, male and female, suffering from infectious diseases were treated in the general hospital and how many died there of the diseases in question. These tables further show the movement of patients (the position at the beginning and end of the period under review and the increase or decrease), the length of treatment given and the cause of the disease. The statistics make a distinction between public hospitals (including University establishments) and private establishments (which include only those containing at least eleven beds). These statistics can of course be compared with earlier statistics, e.g. as regards the number of fatal cases among patients suffering from infectious diseases. The age of the patients is not mentioned. The figures are given for each of the Prussian provinces and for the Federal States ; comparative figures are calculated per 10,000 of the civil population. The following infectious and parasitic diseases are mentioned : smallpox ; chicken-pox ; scarlet fever ; measles and German measles ; diphtheria and croup ; whooping-cough ; mumps (parotitis epidemica) ; typhus ; relapsing fever ; typhoid ; cerebro-spinal meningitis ; erysipelas

tismus and tetanus ; pyæmia, septic pyæmia ; hospital gangrene ; puerperal fever ; leprosy ; scrofula ; tuberculosis of the lungs ; tuberculosis of other organs ; pneumonia (roupy) ; influenza (*grippe*) ; acute articular rheumatism ; malaria ; Asiatic cholera ; cholera nostras ; dysentery ; gonorrhœa ; soft chancre ; syphilis ; anthrax ; glanders ; hydrophobia (rabies) ; trichinosis ; tapeworm ; other infectious and parasitic diseases, and finally, under a special heading, scabies. The last statistics which have been published are for the years 1911-1913 and 1914-1916 (*Medical Statistical Notes* of the Reich Health Office, Vol. 21, 1920) ; while those for the years 1917-1919 will shortly be ready. It will then be possible to consider as a whole the special circumstances of the war period.

The adoption for the German Reich of the international system of registering causes of death is under consideration. The introduction of this system of registration would imply a considerable change in the methods which have hitherto been used in Germany in regard to the statistics of the causes of death and of health establishments, with a view to making it possible to compare them with the statistics of the States which have adopted the international system of registering causes of death, the categories of age agreed upon in the discussions of statistical experts in Paris in 1920 and the other recommendations of the Conference.

A. (b) *Registration of births and deaths.*

- (1) *Procedure of registration and provision for diagnosis of deaths ; definition of still-births ; summary of existing laws.*

The Reich Laws of February 6th, 1875, in regard to the notification of births, deaths and marriages, and of April 14th, 1905, and June 11th, 1920, in regard to statistics of population, make provision for registration of births and deaths and for the collection of statistical data. In accordance with the Law of 1875, public register offices have been established in certain districts, where a special register is kept of births (including still-births), and deaths (including still-births).

Births.

The birth of every child has to be notified within one week to the registrar of the district in which the birth has taken place. Notification is obligatory upon the legitimate father, the midwife who was present at the birth, the doctor who was present, any other persons who were present and the mother, as soon as she is in a fit condition. The obligation upon the persons mentioned in the above list is only operative when a person higher up on the list is not available, or is prevented from making the notification.

The notification must be made by word of mouth. When a child is still-born

or dies at birth, the notification must be made at the latest on the following day (week-day).

A special index-card is filled in by the registrar for each live-born infant. The still-born are entered in the register of deaths (see ii).

In virtue of the Imperial Law of 1875, the following enactments are in force in the various States.

In *Prussia*, the Ministerial Decree of October 26th, 1893, amplifying the Reich Law, provides that :

(1) The birth of all living children must be notified to the register office even if they have only lived for a few moments. The length of pregnancy or of life after birth is not decisive in this case.

(2) Notification is to be made to the register office of :

(a) Still-births.

(b) Fœtus delivered after a pregnancy of more than six months and which are more than 32 cm. in length.

(c) Fœtus in regard to which the duration of pregnancy (under (b)) is doubtful.

(3) No notification need be made of fœtus of less than six months' pregnancy, and whose length is 32 cm. or less.

(In Bavaria the measure corresponding to (3) specifies that no notification need be made in the case of fœtus of less than six months' pregnancy.)

The Prussian Regulation for Midwives issued in 1920 (and also the previous regulations) provide as follows : "Every midwife is under the obligation within a week to notify by word of mouth to the registrar of the district in which the birth has taken place any *illegitimate* birth at which she was present, but she need not notify a *legitimate* birth when the father, whose duty it is to make the notification, is dead, absent, or prevented from making the notification. If the midwife is doubtful as to the sex of the child, she must call in a doctor before notifying the birth.

A child is to be regarded as still-born or dying at birth when no pulsations of the heart are observable after issue from the womb.

Notification to the registrar is not necessary in the case of still-births which take place after less than six months' pregnancy, or when the length of the fœtus does not exceed 32 cms. Such still-births, however, must be entered in the record book by the midwife with the necessary details.

(ii) *Registration of Deaths.*

The Reich Law of February 6th, 1875, lays down that every death must be notified to the registrar of the district in which the death occurred not later than the following week-day. The head of the family, or in his absence, or if he is in any other way prevented from giving notification, the person in whose apartment or house the death took place, is responsible for notification.

An index-card must be filled in by the registrar for every death, including cases of still-birth.

In doubtful cases index-cards forwarded by Prussian registrars to the Prussian Statistical Office must be transmitted by the latter to the *Medical Officers of the Kreis* for the purpose of verifying the causes of death.

In regard to *suicide*, special index-cards for male and female persons, in addition to the ordinary death index-cards, must be filled in by the police authorities and forwarded for inspection to the Medical Officers of the *Kreise*, who check them and transmit them once a year, before January 15th of the following year, to the Statistical Office.

1. *What tabulations of deaths (weekly, monthly and annual) are made in the Central Statistical Office and in the Ministry of Health ? (By locality ? by sex ? by age ?)*

The Central Statistical Offices of the various States collect all the information contained in the index-cards of the register offices and tabulate it on uniform lines. These tabulations are forwarded to the Imperial Statistical Office at Berlin. The latter publishes yearly its authoritative work entitled "Statistics of the German Reich" and has, since 1907, published a special volume on the movement of population in the German Reich as a whole. The contents of these volumes is arranged as follows : — General information with regard to the natural movement of population ; marriages, births, deaths ; infant mortality ; movement of population and infant mortality in the smaller administrative districts ; causes of death ; suicides ; overseas emigration ; parts. Reference is made also to questions of origin of disease, sex and age. Attention may be drawn to the statistics of mortality according to age. These "death tables", which are made out for periods of ten years, form a body of records which may be compared with those of any civilised country. It is, unfortunately, impossible to quote the headings of the extremely exhaustive tables regarding births and deaths, owing to limitation of time. It should, however, be pointed out that these headings are all printed in Volume 276 of the Statistics of the German Reich (Movement of population in the years 1914-19), published by Puttkammer u. Mühlbrecht, Berlin, W. 56, Französischestrasse 28. The price of this volume is, at the moment, about 13,000 marks ; it is a folio volume three inches thick.

The Municipal Statistical Offices or the Register Offices forward figures for births and deaths direct to the *Reich Health Office*. These figures are then used for the statistics of the Reich Health Office, already referred to, which are tabulated on regular forms. The accuracy of entries relating to causes of death in the weekly and monthly statistics of the Reich Health Office is, in the main, ensured by the fact that these statistics extend to all the towns, in which medical post-mortem examination is generally compulsory. The accuracy of entries in the annual "Causes of Death

Statistics" published by the Reich Health Office for the entire Reich is ensured by the fact that in all States in which a medical post-mortem examination, or, in default of doctors, a post-mortem examination by lay persons is prescribed, the causes of death columns are compiled on the basis of the "Post-mortem examination certificates" drawn up by post-mortem examiners.

A. (c) *Results of last census.*

The last census in the German Reich was held on October 18th, 1919. It shows that there were 22,734,380 persons resident in communes of less than 2,000 inhabitants; 11,268,791 in communes of 2,000-10,000 inhabitants; 12,351,129 in communes of 10,000-100,000 inhabitants and 14,057,784 in communes of 100,000 inhabitants upwards; a total of 60,412,084 persons domiciled in Germany — 28,779,498 males and 31,632,586 females (Reich Statistical Office: Quarterly Volumes of the Statistics of the German Reich, 29th Year, 1920, Vol. 1).

A. (d) *It is desired that the latest publications regarding notifications of cases of disease, deaths and births, and the total figure of the population be provided.*

In regard to this item, reference may be made to Nos. 2, 10 and 12 of the "Reich Health Office Bulletins", which have already been forwarded to the Health Organisation of the League of Nations. Later figures are being published in the Bulletins at the present time.

B. *A study of the shortcomings, errors and various factors and conditions which may effect the accuracy and completeness of these records and the statistics.*

C. *Efficiency of the organisation and conditions affecting its efficiency.*

(i) *Births.*

As is known, in Greek Orthodox and Roman Catholic countries, even an unborn child may, in an emergency, be baptised by the priest or midwife, without regard to whether the child is actually alive. A baptised child is then notified as being born alive. This also occurs at times in German Catholic areas, as is borne out by the low figures for still-births noted there.

The statistics for this subject may otherwise be considered reliable.

(ii) *Causes of Death.*

As the data as to causes of death on the index-cards in the register offices supplied by non-medical persons, there is often considerable doubt as to their accuracy. In accordance with the instructions contained in columns 9 and 10 of the death

index-cards, the registrar must, it is true, enquire whether the deceased person was being attended by a doctor. If so, the registrar must ask the person making the notification what the medical diagnosis was and thus obtain accurate information as to the cause of death. Accuracy, however, is best ensured by compulsory *post-mortem* examination, especially when conducted by a doctor ; the examination is most reliable when conducted by the doctor who attended the deceased during his last illness. A *post-mortem* examination is less trustworthy when conducted by lay persons with some training in the subject : (barber-surgeons — “Bader” — in various districts in Bavaria, or layers-out — “Leichenfrauen” — in Saxony).

The system of “compulsory *post-mortem* examination”, as enacted by police regulations, expanded steadily in Germany up to the outbreak of war — chiefly in the towns but also, to a less degree, in the country communes. It is hardly possible to give an accurate survey of the subject, as no regular data have been supplied by the States. We might, however, give a few figures to show the development of the system. The following, for instance, were the data for Prussia in 1921 : medical *post-mortem* examinations were held in Berlin, in the administrative districts of Arnswald and Cassel and in the Rhineland, and in 30 *Kreise*, 455 towns and 268 country communes. In *Hessen* they were held in 583 communes (including all towns). In *Bavaria* *post-mortem* examinations were conducted by doctors in 41 % of the cases, by barber-surgeons in 40 %, and by laymen in 35 %. Hamburg, Bremen and Lübeck all employ the system of medical *post-mortem* examinations, Brunswick employs it in 14 towns, Anhalt in 3, and Saxony in 2, while in other cases *post-mortem* examinations are held by non-medical persons, etc. In this connection, however, the question whether the deceased was being attended by a doctor is of great importance. For instance, out of 100 deaths (excluding still-births) in Bavaria in 1919, 69.7 % were those of persons attended by a doctor, in 1912, 71 % ; in Württemberg in 1909, 68.6 %, and in 1913, 71.7 % : in *Baden* in 1909, 75.6 %, and in 1913, 77.7 % : in Saxony in 1909, 69.7 % and in 1913, 74.8 % of deaths were medically attested. (Causes of Death Statistics in the German Reich for 1913, *Medical Statistical Notes* of the Reich Health Office, Vol. 19, 1917, forwarded to the Health Organisation of the League of Nations).

The further development of the system of *post-mortem* examination was hindered during the war and especially after it, as regards the larger country *Kreise*, by the question of expense and the frequently inadequate supply of doctors in those areas. As has already been mentioned, the inspection of any corpse by a doctor may be ordered under the terms of the *Reich Epidemic Law*, in all cases specified in the law. Police orders may be issued in *Prussia* for the official inspection of any corpse, before burial, by a doctor where possible, in localities infected by *anthrax*, *glanders*, *dysentery* or *typhoid*.

Notes on (i) and (ii).

Certain variations may be observed in the final figures upon comparison of the annual statistical compilations, prepared in the Reich Statistical Office and the Reich

Health Office respectively, as regards the number of live-born and still-born children and the number of deaths. This is due, according to the Reich Health Office statistician, to variations in the data contained in the statistical material which is received at different dates by the two offices referred to from the Federal Governments, and also to the fact that in certain Federal States the data for the Causes-of-Death Statistics are compiled by the Government medical officers, who are not aware (*e.g.* in Bavaria and Thuringia) of the total number of cases of death reported at the register office.

Otherwise the differences in the figures for 1911-1913 were insignificant, amounting, as regards the comparative figures for the entire population, either to nothing at all, or only to a variation in the second decimal place. (Causes-of-Death Statistics in the German Reich for 1913 : *Medical Statistical Notes* of the Reich Health Office Vol. 19, 1917.)

(iii) *Infectious diseases.*

The duty of notification is generally satisfactorily carried out by doctors, whereas the reporting of cases by the heads of households leaves much to be desired. Medical officers are instructed in their service instructions to take suitable steps to enforce the observation of the notification obligation by persons upon whom it is imposed by law. Further, under the Epidemic Laws, persons who fail to make notification, or delay doing so for more than twenty-four hours after receiving intimation of any notifiable occurrence, may be fined or imprisoned.

It sometimes happens, however, in those Federal States in which suspicious cases of typhoid, dysentery or cerebro-spinal meningitis are not notifiable, that no notification is made by doctors attending cases in the event of a bacteriological analysis — carried out at their request — giving negative results, even though the clinical symptoms cause them to suspect the presence of the disease ; the result is that cases of this kind do not receive further investigation and, accordingly, in the circumstances referred to, are not included in the statistics. A Reich law making notification of suspect cases compulsory would be required to get rid of this anomaly.

Further, a comparison of the figures in respect of deaths from notifiable diseases (1) as ascertained from the index-cards of the register offices, and (2) as reported to the police authorities or medical officers, shows, under certain circumstances, appreciable differences, the former group being far the more numerous. This was especially the case in regard to deaths from tuberculosis of the lungs and larynx, though also in regard to scarlet fever, puerperal fever, etc. The reason in a very large number of cases is that in the larger country *Kreise*, for instance, sick patients were attended by a doctor at the beginning, but not during the last stages of the disease, so that the doctor received no intimation of death. In other cases, however, there was punishable failure to notify *even death* resulting from scarlet fever, etc., although the doctor had notified the sickness in due time in accordance with the regulations. Such failure constituted, it is true, a regrettable infringement of the Police Health

egulations, but the statistics were not affected thereby, inasmuch as the medical diagnosis was entered on the death index-cards in consequence of the statement made by the lay person effecting the notification. The figures derived from the register offices are, in cases of this kind, much more complete and accurate than those supplied in accordance with the provisions of the epidemic laws, and proper weight is attached to them accordingly.

D. *A description of the statistics available for each disease for past years, including a description of the details provided in the statistics, e.g., sex and age distribution, rural and urban classifications, etc.*

All the statistics which have been described are comparable with the statistics of previous years, as they are founded on a uniform system. Any data required in regard to deaths from the various diseases for previous years can also be obtained from them. Reference has already been made to the distinctions drawn according to age and sex. Account is also taken of the difference between rural and urban areas, especially by means of statistics for the small and large towns, whilst the figures for the country districts may be calculated from the general German comparative figures, by deducting the figures for the towns.

Morbidity statistics in regard to *non-notifiable* diseases are compiled only by some of the larger sickness associations, and then only in cases of disablement, so that they neither comprise all cases of sickness nor refer to the entire population.

II.

1. (a). *The existing public health legislation and the decrees enforcing it ;*

(b). *The sanitary organisations, both central and local, i.e., State organisations, provincial or district organisations, departmental or communal organisations; the number of State Sanitary and Public Health Officers, of provincial and communal Officers; the method of their recruitment; the amount of their remuneration and the method of payment; auxiliary personnel; medical organisations.*

In Germany, under Article 7 of the Constitution of August 11th, 1919, *the Reich* has legislative authority in regard to matters affecting the population, the care of mothers, orphans, children and the young, health, veterinary surgery, the protection of plants against disease and noxious insects, trading in food and luxury stuffs and objects of daily use, industry and mining and insurance. Article 9 confers upon the Reich the power of legislating on matters affecting public welfare and the protection of public order and

security in cases in which uniform regulations may be necessary. Under Article 10 the Reich can establish by legislation the guiding lines for *settlements and agricultural colonies (Heimstätten)*, *housing, distribution of the population and burial*. Under Article 15, the Reich Government exercises powers of *supervision* in matters in which the Reich has the legislative power, and it can publish *general instructions* as to the execution of Reich laws by the State authorities and send *commissioners* to the central authorities of the States (and with their consent to the subordinate authorities also) to supervise such execution. The *State Governments* are obliged, upon application by the Reich Government, to *rectify any defects* in the execution of the Reich laws.

The Chancellor, together with the Reich Ministries placed under him, is the competent authority for the exercise of the rights referred to. Questions of health affecting the Reich are dealt with mainly by the *Reich Ministry of the Interior* and the *Reich Ministry of Labour*. Department II in the former conducts all business connected with public health, sanitary police and hygiene, is responsible for all questions affecting medical staff, for medical examinations and preventive measures against diseases which are dangerous to the community or contagious, attempts to procure abortion, infantile mortality, tuberculosis and the abuse of alcohol and tobacco, for measures connected with public food, the advanced training of doctors, pharmacies, the food-stuffs trade, veterinary surgery, and to a certain extent industrial hygiene, poor relief, residential qualifications for relief, the welfare of foreign workers and questions connected with foreigners generally. Department II contains a special sub-department directed by a medical counsellor in the Ministry and employing two medical reporters. Department III for education and schools deals with popular education, child welfare, physical training and training of professional welfare workers. The work of Department V includes, amongst other matters, the care of refugees.

The *Reich Ministry of Labour* deals with all matters affecting the care of workers and employees, the conditions of the labour market, welfare institutions and other questions of social policy. Included among these are the insurance of workers and employees, the maintenance of disabled soldiers and widows and orphans, the care of the unemployed, and the protection of workers from the point of view of industrial hygiene.

The *Reich Health Office*, which is placed under the control of the Reich Ministry of the Interior, was founded in 1876 to assist the Chancellor and the Ministries under him in the drafting of legislation and in the exercise of the right of supervision over the execution of laws concerning the health of human beings and animals (and plants). The Reich Health Office's sphere of work corresponds, generally speaking, to the domain of public hygiene which has been referred to, except that the protection of plants is entrusted more especially to the Reich Biological Institute for Agriculture and Forestry, and insurance to the Reich Ministry of Labour (Reich Insurance Office, Reich Insurance Institute for Employees). In order to fulfil its duties, the Reich Health Office obtains information with regard to institutions at home and abroad, and scientific experiments, observes the effects of measures taken in the interests of public health, conducts its own researches, keeps

lately in touch with German scientific associations and the central health authorities of foreign countries, compiles medical and veterinary statistics and promotes, by means of publications, knowledge of public and domestic hygiene. The works published by the Reich Health Office give the results of its own researches, whilst the "Medical Statistical Notes" contain calculations based upon the annual statistics. The "Bulletin" give current information as to the situation in Germany in respect of diseases affecting mankind which are dangerous to the community or contagious, and epizootic diseases, and with regard to laws, decrees and provisional measures in this connection, proceedings of legislative bodies, associations, etc., and the weekly and monthly statistics; an annex is also published containing all relevant legal decisions. The Reich Health Office promotes popular education in hygiene by issuing a popular book entitled "Health Manual", as well as memoranda and pamphlets.

The *Reich Health Office* consists of four departments: the medical, chemical hygiene, bacteriological and veterinary departments.

Auxiliary to the Reich Health Office is the *Reich Health Council*, which acts as an advisory body, and is responsible, according to Article 43 of the Reich Epidemic Law (June 30th, 1920, for assisting the Reich Health Office in carrying out its duties. The individual members (numbering, at the present time, 75) are chosen by the Reichstag for a period of five years from among men of prominence in the medical and veterinary spheres (men of science, practising doctors and technical experts), the President and his deputy being chosen from among the members by the Reich Minister for the Interior. The Reich Health Council is divided into 11 Committees, viz.: (1) health matters in general (including questions relating to the health staff); (2) the control of foodstuffs; (3) the prevention of epidemics (infectious diseases and diseases dangerous to the public); (4) water supply, the removal of waste products and the maintenance of water supplies in a clean condition; (5) social hygiene, including school hygiene; (6) factory and industrial hygiene; (7) marine and tropical hygiene; (8) population and race hygiene; (9) provision of medicaments (including the traffic in poisons); (10) veterinary matters (including questions affecting the veterinary personnel, and the inspection of slaughter-houses and meat); (11) statistics. It is the duty of the Reich Health Council to give advice, on request, to the authorities of the several States, and it may, for the purpose of obtaining information, place itself in direct communication with them or send representatives who may collect information on the spot, with the co-operation of the State Authorities.

Of the offices carrying on work under the Ministry of the Interior, mention must be made of the *Reich Commissioner for the prevention of typhoid in Central Germany and the National Commissioner for civil prisoners and refugees*, who is in charge of 22 quarantine camps, conducted under stringent health regulations and supervised by a Health Adviser (the Director of the Medical Department of the Reich Health Office).

Under the Constitution of April 16th, 1871, the Reich had, it is true, the right of supervision and legislation in connection with police regulations on medical and veterinary matters, i.e., measures of the nature of police sanitary regulations, but it made use of that right only in cases of special importance. For example, the Reich

promulgated the Reich Vaccination Law of April 8th, 1874, the Laws of 1900 regarding the Prevention of Human Diseases Dangerous to the Public, the Epizootic Diseases Law of 1909, the Laws of 1879 regarding traffic in foodstuffs, luxury articles and articles of general utility, the Reich Industry Regulations, providing for industrial inspection (latest edition 1911), and the Regulations regarding the examination of doctors, dentists, and chemists. Moreover, the Reich issued numerous regulations in regard, for example, to trade in medicaments not conducted in pharmacies (1901), trade in poisons (1894, 1901 and 1906), trade in patented preparations (1903 and 1907), and trade in potent drugs (1896 and 1898), and it also compiled a German pharmacopœia, etc.

The Criminal and Civil Codes serve as the general uniform basis of law in Germany.

The laws regarding public health are executed by officials of the various States, but on lines laid down in the executive regulations issued by the Reich authorities.

Where the Reich authorities have refrained from promulgating laws regarding public health, the German States, with Prussia at their head, have by their own laws organised a public health service on admirable lines.

The highest *Prussian Health Authority* is the Ministry for Public Welfare. Department I, which is under a doctor, deals with public health matters (including police and sanitary regulations). Department II deals with housing and land settlement, and Department III with the care of the young and general welfare work. The Ministry also has control of the Robert Koch Institute for Infectious Diseases, the State Hygienic Institute, two Hygiene Institutes, 10 Medical Analysis Stations, two Typhoid Laboratories and the State Foodstuff Laboratory.

The Ministry is assisted by a *State Health Council*; for the provinces joint boards have been set up composed of *lawyers and doctors*. The police authorities of the provinces and districts (the Ober- and Regierungspräsidenten) are advised by Regierungsräte und Medizinalräte. The Law of September 19th, 1899, regulated the official duties of the *medical officer of the "Kreis"* and established health committees in the communities (in places of over 5,000 inhabitants). The work of the medical officers is regulated by the local police authorities (the Landrat, the Commissioner of Police or the magistrate).

It is the duty of the Health Committees to carry out a joint system of inspection to support measures taken by the police authorities, to give expert advice and to make suggestions.

In the other German States, the health authorities are organised on similar lines. In many instances, the technical advisory body has the title of "State Office of Health" and is, in most cases, under the control of the Ministry of the Interior (in Thuringia it is under the Ministry of Commerce). We have no space here to give further details of the organisation of the public health service.

Special *Health Ministries* under medical administration do not exist in the Federal Republic or in any of the States.

The work of public instruction in matters of hygiene has been energetically taken in hand by a Reich Committee and by State Committees with their subsidiary organisations.

The work of welfare and health offices specially concerned with care work (on behalf of infants, tuberculous persons, persons suffering from venereal disease, cripples, etc.) which have recently been established in large numbers by the *Kreis* and municipal authorities, is carried on by the public medical officers, specially appointed communal doctors, practising doctors, and a carefully trained staff of care workers. The competent State authorities direct this work.

It is unfortunately impossible to give the number, rate of remuneration, and method of recruitment of *all* the officials of the State, provincial or communal health services, owing to the fact that there are no available statistics on the subject. In order to obtain definite information as to the state of affairs, it would be necessary to conduct exhaustive and lengthy enquiries, for which the time allowed for this survey would be insufficient. The important point appears to me, however, to be to obtain information as to the *medical officers* who are concerned with the actual carrying out of laws or regulations regarding public health, or with their local supervision. For, from a public health point of view, the most important matter is the carrying out of the regulations, even in the smallest administrative district, since, if there is no assurance that this being done, realisation of the principles of hygiene in the whole body politic can only remain a pious wish. The officials responsible for this work, however, are the authorities of first instance, and, for this reason, it would appear advisable to confine the present survey to those officials.

Prussia has, at the present time, at its disposal some 449 *Kreis* medical officers, of whom 274 receive full-time and 175 only part-time salaries. The difference between full-time and the part-time *Kreis* medical officers does not lie in the fact that more official duties are assigned to the one category than to the other. The sphere of official duties is identical for both classes. In some of the smaller rural districts, however, official work was sufficiently light to make it possible for the *Kreis* medical officer to carry on, in addition, a private practice. The income brought in by a practice of this kind was frequently very considerable and, for this reason, the State came to grant smaller salaries in these cases than where time was fully occupied by official duties. But the demands made even upon this category of officer are steadily on the increase, with the result that, in the face of the growth of official work, private practices almost tend to disappear. The part-time posts are therefore being converted in increasing numbers into full-time posts, as financial conditions allow, so that at a date which may be hoped, is not far distant, only full-time *Kreis* medical officers will exist in Prussia. Full-time *Kreis* doctors are forbidden to carry on a private practice, except in urgent cases, or in consultation with other doctors. They may not hold any subsidiary post or engage in any subsidiary salaried occupation without having the previous consent of the central authorities under whose control both the principal and subsidiary posts are placed.

A medical officer may undertake confidential medical work, which does not pertain to the office of *Kreis* doctor as such, but which comes to him in the first instance as a matter arising out of public or private law. In the event of refusal, his official superiors may, indeed, insist on his undertaking the work. The following medical

work is considered as confidential : medical duties in connection with State institutions (e.g., penal establishments and prisons) ; the inspection of and giving of expert opinion on the health of officials of the Imperial or one of the States' Administrations, male and female teachers, etc. ; the inspection and, if necessary, treatment of prisoners during transport ; the inspection of the poor of the locality at the request of the competent *Kreis* or district committee ; the inspection of certain persons applying for grants from the Reich Pensions Fund of 1870-71 ; the issue of medical certificates for entering the teaching service of the Reich, one of the States or some other public authority or for admission to institutes for pupil teachers, training colleges for male and female teachers or physical training colleges ; the issue of certificates regarding the physical efficiency and state of health of industrial workers, prescribed as a condition of entry into certain dangerous trades ; work as confidential medical adviser to a Health Insurance Institution ; work as advisory doctor at advisory centres for venereal diseases ; the inspection, at the request of trade organisations, of persons injured in accidents ; work as sanitary adviser in connection with waterworks ; work as communal medical officer in towns or school medical officer ; the issue of certificates of physical efficiency for motor-drivers ; the inspection of the supply of medicaments and foodstuffs for sick persons on merchant vessels.

Full-time Kreis medical officers are in receipt of a fixed official income, consisting of a salary and a house allowance based on a fixed scale, exclusive of fees for official work. In so far as such fees, the rate of which is fixed by certain regulations regarding fees, are chargeable at all, they are collected by the *Kreis* medical officer but paid over by him into the State funds. The remuneration for confidential work is, however, retained by the *Kreis* medical officer.

On the other hand, the *part-time Kreis* medical officer, who only draws a fixed salary, is entitled to all fees for official or confidential work ; by special authorisation he may also, if necessary, draw a service allowance.

The *Kreis* medical officer receives, in addition, an office allowance and, in the case of official journeys, a subsistence allowance and travelling expenses ; in the event of transfer he receives a removal allowance on the basis of the legally prescribed rate.

Of the 449 full-time *Kreis* medical officers in Prussia, 170 belong to salary Group XI, and 104 to Group X, which also includes the 175 part-time medical officers. The first group belong the *Kreis* medical officers who act as permanent advisers to Governments, or who at the seat of Government act as permanent deputies for the Regierungsrat and the Medizinalrat, together with a number of senior *Kreis* medical officers of high rank. Salary Group XI comprises salaries of 27,500 to 39,600 marks, salary Group X comprises salaries of 24,000 to 34,000 in seven grades ⁽¹⁾. In addition there are local allowances, graded according to the cost of living in the locality, and allowances in respect of children. These portions of pay are at present subject to a cost of living bonus of 1,045 %. In addition, there is an allowance in respect of the medical officer's wife.

⁽¹⁾ The Report is dated May 14th, 1923.

The part-time *Kreis* medical officers receive 50-70 per cent of the basic salary of Group X. Thirty-eight assistant *Kreis* doctors were employed in 1921, either attached to *Kreis* doctors or as temporary *Kreis* doctors.

The *Regierungsräte* and *Medizinalräte* come under Group XI, except such as are attached to the Oberpräsident who come under Group XII (salary of 32,500 to 47,500 marks in seven grades ; otherwise as above).

The medical officers of the *Kreise* are, for the most part, recruited from *Kreis* assistant medical officers (rarely from practising doctors) provided that they have passed the prescribed State medical examination ; “*Regierungs und Medizinalräte*” are recruited from *Kreis* medical officers ; while the *Ministerialräte* in the medical department of the Ministry for Public Welfare are mostly chosen from among the *Regierungs und Medizinalräte*.

In 1917 there were 168 posts for district medical officers in the 8 administrative districts of *Bavaria* and 67 in the 5 prefectures of *Saxony* ; 61 posts for *Oberamtsärzte* in the 4 *Kreisregierungen* of *Württemberg*, 54 for district medical officers in the 4 provincial commissioners’ districts of *Baden* and 18 for *Kreis* medical officers in the 3 provinces of *Hessen*. In the remaining States there were 134 other posts. Leaving minor changes out of account, the whole territory of the Reich had in round numbers 500 medical officers of the categories mentioned at its disposal. In general the service is regulated as in Prussia, as is also the case in the matter of salaries, the payment of Federal State officials being calculated in the same way as those of the Reich’s officials. In *Bavaria*, the “*Regierungs und Medizinalräte*” are all in Salary Group XII.

In most of the States appointment as a State health official or as a medical officer attached to the courts is conditional upon passing the examination for State doctors. The regulations regarding this examination are based in substance on the same principles in all the German States. We need, therefore, only quote the Prussian regulations here (the latest were issued on February 9th, 1921), which make considerable demands on the candidate.

The candidate must not only have followed a course of lectures on forensic medicine and taken part for at least six months in the practical work of a psychiatric clinic, but he must also have accomplished a full course of study in social hygiene at one of the academies of social hygiene at Breslau, Charlottenburg and Düsseldorf. In addition, he must have followed courses of pathological anatomy, bacteriological hygiene and forensic medicine, each of at least three months’ duration, in a university institution of the German Empire ; and he must have acted as assistant in a psychiatric clinic for at least three months. The courses of pathological anatomy, bacteriological hygiene and forensic medicine can be followed either at one of the academies of social hygiene mentioned above or at the Düsseldorf Medical Academy, and the course of bacteriological hygiene can also be taken at the Robert Koch Institute for Infectious Diseases in Berlin. The examination itself is divided into a written test and a practical test.

For the written test, the candidate must write two scientific treatises, one in the domain of public health or social hygiene and the other in that of forensic medicine.

medico-legal matters affecting health insurance or forensic psychiatry, and in addition he must describe an imaginary legal case with notes in regard to an autopsy. The written test must be passed within a period of six months, which can be prolonged for another three months. The scientific treatises may be wholly or partly dispensed with if the candidate has already done work which has been subjected to scientific examination. If the treatises are regarded as satisfactory, the candidate is admitted to the remaining tests.

The practical oral test for *Kreis* medical officers, which takes place before the members of the Examination Committee on three successive days, and as a rule in Berlin, relates to the following subjects :

1. Medical legislation and administration ;
2. The care of public health and bacteriological hygiene ;
3. Social hygiene, industrial hygiene and the prevention of epidemic diseases ;
4. Forensic medicine and toxicology ;
5. Forensic psychiatry.

The candidate must then treat in writing, under examination conditions, a practical case in the domain of medical police work, solve a practical problem in the province of hygienic and bacteriological analysis, and treat in writing, under examination conditions, a practical subject relating to social hygiene (three hours being allowed for each of these tests) ; he must investigate the condition of an injured man and of a person suffering from mental disease, and write reasoned diagnoses under examination conditions (one hour being allowed for each case) ; make a full legal autopsy in respect of at least one main cavity and examine sections of a corpse under the microscope, and finally, he must pass an oral test in the various subjects of examination.

If the candidate fails to pass any part of the examination, he must be re-examined, but he may not be re-examined more than once. These examination regulations came into force on October 1st, 1921. In Prussia, it is a condition of appointment as *Kreis* medical officer that the candidate should have worked five years as an independent medical practitioner after passing the examination.

The number of doctors in the *provincial service* of the States is not known, and statistics have been kept. They include the large number of directors and assistant doctors in the provincial lunatic asylums, homes for the feeble-minded, the blind, the deaf and dumb, and institutes for the training of midwives. If we only take into account the lunatic asylums of the German Reich (excluding Alsace-Lorraine), there were 481 doctors in the year 1916.

The Prussian Minister for Public Welfare laid down in 1919 and 1921 the fundamental principles "regarding the training of *Communal doctors* and the relation of medical officers of the *Kreis* to communal medical work". In the training of communal doctors, a distinction is made between doctors who co-operate on the spot in

tactical work of public welfare and the care of the sick, and those who are permanently at the disposal of the Communal Council, both in an advisory and an active capacity, regard to all questions of communal and social hygiene.

To obtain a post as *tuberculosis* expert or as medical officer in charge of *infants, all children, cripples or persons suffering from alcoholism*, the applicant need only supply evidence that he possesses the necessary specialised knowledge and has practised at least six months as assistant doctor in the branch in question.

To obtain a post as *school* doctor, the candidate must give evidence that he has followed a special officially recognised course of training for school doctors of at least weeks' duration.

It is recommended in general that the *communal medical officers*, whose duty it is to advise the communal administration in all matters of *public health* and *social hygiene*, should be required to pass the examination prescribed for *Kreis* medical officers. Medical officers should only be appointed who have accomplished a four months' course of study at one of the academies of social hygiene (Berlin, Charlottenburg, Breslau, Düsseldorf).

In rural *Kreise*, the communal medical work can be carried out by the *Kreis* medical officer. And when, as is often the case, *Kreis welfare centres* have been formed in these *Kreise*, this officer is the best person to take charge of the Public Health and Social Hygiene Section. When, as is the case in the larger towns, and especially in those which are not within a *Kreis*, the communal medical work is too extensive to be dealt with by the medical officer of the *Kreis*, the appointment of special communal medical officers is necessary.

In 1921, 48 chief communal medical officers were appointed in Prussia, some of whom were also entrusted by the State with *Kreis* medical work. In regard to the conditions which prevail in these matters — including the question of salaries — in the other German States, the writer has no information. But there is certainly a very considerable number of communal medical officers in Germany, if the doctors engaged in the separate branches of medical work mentioned above are included.

The activities of communal medical officers are naturally subject to the control of the Government health official (medical officer of the *Kreis*, district, etc.).

Among the assistants of medical officers in their work of combating epidemics, mention must be made in the first place of the *disinfection officials*, who are trained in national disinfection schools and who pass a public examination; they are appointed to the communes, and work under the supervision of the medical officers of the *Kreise*, who examine them every three years; they also periodically undergo a revision course in the disinfection schools. In many *Kreise* special *Kreis* disinfection officials have also been appointed to act as "Health Inspectors". The number of qualified disinfection officials employed in Germany is not known, but it is certainly very considerable. The Free State of Saxony alone had 386 officially qualified disinfection officials in its employ in 1922. Paragraph 68 of the Service Instructions for the medical officers of *Kreise* in Prussia provides as follows: "When the need arises and when the

system of *post-mortem* examination by doctors has not yet been brought into force, the medical officer of the *Kreis* will be responsible for the training, examination and supervision of *post-mortem* examiners. Detailed regulations for *post-mortem* examination will, if necessary, be issued by the authorities of the locality and *Kreis*. In the selection of *post-mortem* examiners care should be taken not to appoint persons engaged in subsidiary occupations of an unsuitable character."

Kreis medical officers have naturally supported the demand for *post-mortem* examination by doctors, as examination by non-professional men can only be an emergency expedient.

The *medical organisations* which have been formed in all the States of the Reich are, as a rule, representative professional bodies (associations of doctors, which, in some States, are legally regulated, and often have disciplinary powers in regard to their members). Their participation in the work of public health is of importance, inasmuch as they send representatives to the various State organisations of a technical or medical character, the health councils, etc. The latter utilise their services for the purpose of bringing recommendations and proposals relating to special health questions to the notice of individual doctors.

II.

2. Sanitary Equipment. Hospitalisation supported by the State, provinces, communes and private organisations; hospitals; sanatoria, lunatic asylums, etc.

The hospital statistics for the German Reich (excluding Alsace-Lorraine) in 1913 give the following figures for *General Hospitals*: 2,405 public (with 203,992 beds) and 1,266 private (with 85,296 beds). The University health establishments are included among the public hospitals, but in the case of private establishments, only those with eleven or more beds are counted. The numbers of *Hospitals for Mental Diseases* were 224 public (with 124,515 beds) and 257 private (with 37,048 beds). Of *Lying-in Hospitals*, there were: 76 public (with 4,361 beds) and 34 private (with 842 beds), while the numbers of *Eye Hospitals* were: 54 public (with 3,042 beds) and 10 private (with 2,186 beds). As we have mentioned, these statistics do not include establishments containing up to ten beds (inclusive); in consequence, the ascertainment of figures for private establishments, e.g., establishments for eye and ear diseases, lunatic asylums, sanatoria, which often contain less than this number of beds, must be regarded as too small. Moreover, the statistics do not make any distinction between national, provincial and communal hospitals, and therefore the numbers of those belonging to the State and to the self-governing bodies respectively cannot be ascertained. The private hospitals of the religious associations (Leagues of Charity, Religious Orders, the Red Cross, etc.) are not given under a separate heading. This and certain other points will have to be borne in mind in establishing the new classification of hospitals.

statistics proposed in connection with the adoption of the international system of registering causes of death.

All establishments are subject to sanitary police supervision. This is exercised in Prussia, *e.g.*, in the *Kreise*, by the local medical officer (in accordance with the prescribed regulations) and in the provincial establishments by the "Regierungs und Medizinalrat" ; in addition, lunatic asylums are inspected at least once a year by a Commission of Enquiry appointed by the Ministry, assisted by the medical officer of the establishment and a member of the board of directors. Any defects which may be discovered are embodied in a Protocol and notified to the police authorities with a view to their being remedied. If, after an inspection by the medical officer of the *Kreis*, the directorate of the establishment should refuse to comply with the latter's instructions, the matter is submitted for decision to the Regierungspräsident before a police warrant is issued.

Plans for extensions of or alterations to hospitals must be examined and reported upon by the medical officer of the *Kreis* or the district administrative authorities. In the case of the *licensing of private hospitals*, which is done by the administrative committee of the district (Article 30 of the Imperial Industrial Regulations), the consent of the medical officer of the *Kreis* is required.

As regards the *planning, construction, filling out and administration of hospitals*, detailed regulations have been issued in the German States (in Prussia, *e.g.*, the Ministerial Decrees of August 19th, 1895, July 8th, 1911 and September 5th, 1913) which also deal specifically with establishments for mental diseases, lying-in hospitals, sanatoria for lung diseases, eye hospitals, etc.

As regards *administration and management*, it should be mentioned that, in the larger establishments, administration is quite distinct from medical superintendence. Each establishment has its internal *regulations*. *Book-keeping and the filling-in of statistical forms* are also subject to regulation.

Owing to Germany's grave economic position, the *costs of hospital treatment* have risen enormously (especially owing to the eight-hour working day, which has necessitated the engagement of double the nursing staff), and it is at present impossible to construct *new buildings*, while even *repairs* cannot be carried out to the necessary extent.

II.

3. The Campaign against Infectious Diseases.

(a) and (d). (*Diseases which are subject to compulsory notification, and others.*)

The campaign against infectious diseases constitutes one of the most important tasks of the public health service. In spite of all the prevailing economic difficulties, this campaign is maintained at the cost of great financial sacrifice, since the threat

of the importation of epidemics, in particular from the Eastern countries, constitutes a most serious danger. Some guarantee against this danger is provided by the Paris International Convention of 1912, and special agreements with neighbouring countries, but the principal battle must be waged in the home country against the importation of disease which is consequent upon international intercourse and which therefore cannot be prevented.

In addition to the campaign against diseases dangerous to the public, great attention is paid to combating endemic and other infectious diseases.

PROTECTIVE MEASURES AGAINST DISEASES WHICH ARE DANGEROUS TO THE PUBLIC.

(*Leprosy, Cholera, Typhus, Yellow Fever, Smallpox.*)

The Reich Epidemic Law of June 30th, 1900, and the executive regulations thereunder provide as follows :

Article 12. Diseased persons and persons suspected of being diseased or of carrying infection may be placed under observation. Only such persons as are homeless or have no fixed abode, or who move about from place to place in pursuit of their calling or as a matter of habit may be restricted in their choice of a place of sojourn or work for this purpose. Persons are *suspected of being diseased* who have fallen ill and shown symptoms suggesting the disease, and persons are *suspected of carrying infection* regarding whom, though they may not show any *symptoms* of the disease, it seems reasonable to fear that infectious matter has been absorbed by them. Under this head must be reckoned all persons living or working in the same house as, or coming into contact with, a person who is sick or has died of cholera, plague, etc., or with the evacuations, excretions, etc., underclothes, garments or other infected articles of such a person. Whether persons suspected of infection in cases of *plague* and *cholera* are to undergo bacteriological examination is left to the discretion of the medical officer. If the evacuations of persons suspected of being infected with cholera are analysed three times at intervals of twenty-four hours with negative results, it may be assumed that the virus has been eliminated. The period of *observation* should not exceed ten days for *plague*, *five days for cholera*, *fourteen days for smallpox*, and *three weeks for typhus*, from the last day of exposure to infection. It can be carried out in a mild form (notification by a doctor or other suitable person, etc.), or in a more severe form by restricting the choice of place of sojourn, *e.g.*, in the case of foreign workmen, emigrants, vagrants, hawkers, and similar persons who may spread the disease by moving about from place to place.

Article 13. The higher administrative authorities (the Regierungspräsident, for example) can issue instructions for the whole or parts of their district to the effect that persons travelling thereto, including not only strangers to the locality, but also

natives, who have sojourned for a specified period in localities or districts where a disease which is dangerous to the public has broken out, should report to the local police authorities on arrival. (To avoid giving annoyance such action should only be taken when there is a risk of a widespread epidemic.)

Article 14. Orders may be issued for the isolation of diseased persons and persons suspected of being diseased or of carrying infection.

Isolation must be so carried out that the patient does not come into contact with anyone except those who are nursing him, the doctor and the minister of religion, and that, as far as is feasible, the spread of the disease is rendered impossible. Provided that they comply with the necessary regulations for preventing the spread of the disease, relatives and notaries (*Urkundspersonen*) may be allowed to approach patients when this is imperative for the settlement of important and urgent matters. If the arrangements for the isolation of the patient in his home are not carried out in accordance with the instructions of the police authorities, his removal to a suitable hospital or other place of asylum may be ordered if the public medical officer considers it essential and the doctor in charge of the case is of opinion that it will not injure his patient. (Or the patient may be left in the house and the healthy persons removed, according as the official doctor thinks fit.)

These rules also apply to the isolation of persons suspected of being diseased or of carrying infection. But persons of this description may not be housed in the same quarters as sick persons. Persons suspected of carrying infection may only be housed in the same quarters as those suspected of being diseased if the medical officer considers this admissible.

(Public conveyances — cabs, etc.— may not be used for the transport of diseased persons or suspected cases. If, however, this has been done, the conveyances must at once be disinfected.)

In this connection, it is to be noted that persons who are diseased or suspected of being so are, in the cases referred to, *almost always isolated in hospitals*, of which there is a sufficient number in Germany with isolation annexes or wards. A distinction is drawn between persons suspected of carrying infection who have come into *direct* contact with the patient or corpse (members of the family, fellow-workers, etc.) and those who have only come into contact indirectly. The former are, as a rule, *isolated*, while the latter are merely placed under *observation*. As regards *foreign workmen, refugees from infected areas, emigrants, etc.*, no distinction is made between persons suspected of carrying infection by direct and by indirect contact, since all who have travelled together have necessarily come into very close contact with each other. Therefore, in the case of typhus, all are deloused, and in the case of cholera all are bacteriologically examined, inoculated (inoculation is also carried out in the case of smallpox), and quarantined for the prescribed period.

The law further prescribes that apartments or houses in which persons are ill may be specially marked. The marking shall be in a conspicuous place and shall be in the form of a yellow signboard by day and a yellow lantern by night.

Professional nurses may be subjected to restrictions in respect of travelling (This is, of course, always done.)

Article 15. The authorities of the Federal States are empowered, as regards localities infected by or threatened with a disease which is dangerous to the public

(1) To order sanitary police supervision and the necessary preventive measures against the spread of the disease in respect of industrial production, treatment and storing, and of the trade in articles which are susceptible of spreading the disease. The despatch of goods, etc., may, however, only be prohibited from localities in which cholera, typhus, plague or smallpox has broken out. (Establishments for the sale of foodstuffs may therefore be closed and articles which, according to the certificate of the medical officer, are believed to contain infectious matter, may be withdrawn from circulation until they have undergone thorough disinfection, and, as regards localities or districts in which the disease breaks out on a large scale, the exportation of milk, worn underclothes, old garments, used bedclothes rags (and the collection thereof by itinerant traders) may be prohibited.

(2) To exclude from commercial circulation by hawking articles of the nature indicated in (1).

(3) To prohibit or restrict the holding of markets, fairs, and other gatherings at which large masses of people assemble.

(4) To subject persons employed on vessels or rafts or in other transport undertakings to sanitary police supervision, and to prohibit the transport of diseased persons, or persons suspected of being diseased or of carrying infection, and of articles believed to contain infectious matter.

(5) To restrict the working of vessels and rafts to certain hours of the day.

Regulations (4) and (5) are the basis of the supervision exercised on rivers during cholera periods (riverside stations with doctors, examination of the vessels' and rafts' crews and passengers, issue of certificates in respect of such examination, removal of sick persons, isolation and bacteriological examination of persons suspected of being diseased, or of carrying infection, supply of drinking-water and disinfectants and distribution of pamphlets, etc.)

Article 16. Young people from houses in which persons are ill may be prohibited from attending courses of instruction (not only from attending school).

Article 17. In or near localities infected or threatened with cholera, typhus, plague or smallpox, orders may be issued, in agreement with the public medical officer, prohibiting or restricting the use of wells, ponds, lakes, watercourses and water-conduits, as well as public bathing, swimming and washing establishments and public lavatories.

Article 18. The total or partial evacuation of apartments or buildings in which illnesses have broken out may be ordered, if the public medical officer considers it to be indispensable for the effective combating of the disease (it is specially necessary in the case of dirty and overcrowded dwellings).

Article 19. Orders can be given for the disinfection of articles and rooms believed to contain infectious matter. The disinfection of luggage and merchandise may only be ordered in the case of *leprosy, cholera* and *yellow fever* when, in the opinion of the public medical officer, there is special reason for believing that the articles contain infectious matter. If disinfection is impracticable or is too costly in consideration of the value of the article, the destruction of the latter may be ordered. The regulations for compensation will be found in Articles 28-34.)

Article 20. Measures for exterminating and keeping away rats, mice and other vermin may be ordered as a protection against *plague*.

Article 21. Special precautionary measures may be ordered for the preservation, confining, transport and burial of persons who have died of a disease which is dangerous to the public.

Article 22. The regulations regarding the execution of the precautionary measures referred to in Articles 12 to 21, specially as regards disinfection, are issued by the Reichsrat. (A special Disinfection Order is issued and appended to the "Reichsrat Orders" for the combating of each individual disease which is dangerous to the public. Disinfection begun at the sick-bed and carried out without interruption is of special importance.)

Article 23. The competent State authorities (Landesbehörde) may require the communes or communal organisations to make the necessary arrangements for the campaign.

Article 24. As a protective measure against the importation from abroad of diseases which are dangerous to the public, the admission of sea-going vessels may be made conditional on their fulfilling sanitary police regulations. (The regulations regarding the sanitary treatment of sea-going vessels in German harbours were contained in the proclamation of the Chancellor, August 29th, 1907.)

Further :

1. The admission of other craft used for passenger or goods traffic ;
2. The importation and transport in transit of goods and articles of general utility ; and
3. The admission or transport of persons coming from the infected country may be prohibited or restricted.

Paragraph 2. The Reichsrat is empowered to issue regulations for the carrying out of the following measures. In so far as these regulations relate to the sanitary police supervision of sea-going ships they may be extended so as to apply to vessels

plying between German harbours. *Travellers in transit* from infected areas are only allowed to cross the frontier at certain frontier stations where a medical inspection is held and *persons who are diseased or suspected of being diseased* are *detained and isolated*. The *transport* of such persons in large numbers by rail must be effected in *special trains* or *special (uncushioned) carriages*. Moreover, *houses* must be provided for the accommodation of *emigrants* at the railway-stations and harbours concerned. It is the duty of the local police authorities to decide, in accordance with the opinion of the public medical officer, whether luggage and household effects are to be regarded as infected in the case of *cholera* and *plague*, and, consequently, whether disinfection is necessary. *Underclothing, bed-linen, and wearing apparel* for personal use need not as a rule be disinfected, and it is only when they are very dirty that the medical officer must be consulted. It must always be ascertained whether the departure from the *place of origin* occurred before or after that place was declared to be a "infected area". The *railway authorities* must at once acquaint the *local police authorities* of any *cases of illness* accompanied by symptoms of cholera which may occur, and the latter must inform the former if such illness should break out after arrival, mentioning if possible the train and compartment in which the sick person travelled, so that the carriage in question may at once be disinfected.

Article 25. On the outbreak abroad or on the littoral of the Reich of a disease which is dangerous to the public, the Chancellor, or the Government of the State immediately threatened in agreement with the Chancellor, decides when, and to what extent, the regulations laid down in Article 24, Paragraph 2, are to be put into force.

Article 26. The Reichsrat is empowered to issue regulations regarding the delivery of bills of health to sea-going vessels leaving German ports.

Article 27. The Reichsrat is empowered to issue regulations concerning the precautions to be adopted in the execution of scientific experiments, etc., with disease excitants, and concerning the trade in and storing of disease excitants. Again, Article 35 contains the important stipulation, regarding the prevention of the spread of infectious diseases, that all installations for supplying the public with *drinking-water* or *water for domestic use* and for carrying off waste matter are to be under the constant supervision of *Government officials*. (This applies to the prevention of *contagious diseases*, and not only to the prevention of diseases which are dangerous to the public.)

The communes are, further, under the obligation to remedy all sanitary defects discovered as a result of this supervision. They may be required, according to their respective capacity, to set up installations of the sort referred to, when the latter are deemed necessary as a protection against contagious diseases. The procedure for deciding as to the obligations which should be imposed upon communes is determined by State law (in *Prussia*, the local police authorities alone can impose obligations upon a commune in respect of a matter of local police interest, as, for example, the building of a water-conduit).

Article. 38 also provides that the Federal States must second each other's efforts in the campaign against contagious diseases (reports should also be sent to and from the frontier districts and foreign countries).

On the basis of these legal regulations, and in accordance with the principle that the same measures should be adopted with regard to suspected cases as in respect of duly diagnosed cases, the campaign is conducted on the following lines :

1. *Leprosy.* — Bacteriological diagnosis with the assistance of a special expert ; isolation of the *patient* (preferably in leper homes) ; in the case of "open" leprosy exclusion from public places, and in the case of "closed" leprosy at least one bacteriological analysis monthly. The patient must have a bedroom of his own ; any occupation which would bring him into contact with other persons is forbidden. The children of leprous parents must be removed from the dwelling. *Persons suspected of carrying infection* are placed under the observation of the public medical officer for a period not exceeding five years. (Enquiry regarding state of health and, possibly, examination every six months.)

2. *Cholera.* — Measures against the introduction of the disease by means of the railway (quarantine camp for *refugees* ; medical inspection at frontier stations of foreign labourers engaged for the season ; observation at places of work ; transport of emigrants in closed trains as far as the port of embarkation, where *sanitation* measures are carried out and the emigrants are placed under *observation* in the *emigrants' halls* ; directions given to the railway staff in the form of popular instruction on "cholera and what to do during cholera periods" and the issue of "Regulations for the Campaign Against Infectious Diseases generally in Railway Traffic" ; supervision of passengers in trains ; requisitioning of medical stations, the names of which have been notified to the staff ; transfer of sick persons at certain fixed places ; control of the water-closets in trains and at stations ; superintendence of drinking-water installations for travellers and railwaymen ; supervision of inland navigation and river traffic by control stations ; when the danger of cholera is imminent, drawing the attention of doctors to suspicious cases of illness, bacteriological examination of such cases, inoculation of doctors and nursing staffs against cholera, testing of installations for disinfection, provision of water and drainage, popular instruction of the seafaring population, recommendations to doctors on cholera, isolation of the sick and of suspected cases ; the suspicion of illness only to be regarded as unfounded when the results of three bacteriological analyses made at intervals of one day prove to be negative. The same rule to be applied to discharge after isolation. Five days' isolation (or observation) of persons suspected of carrying infection, and bacteriological examination of such persons as the doctor thinks fit. Carriers of bacilli are treated as sick persons.

3. *Typhus.* — Isolation and delousing of sick persons and persons suspected of being directly infectious, observation for three weeks and delousing at least twice, at intervals of at least five days, of persons suspected of being indirectly infectious.

The delousing and observation of refugees, emigrants and workers engaged by season is carried out at the places mentioned under "Cholera".

4. *Yellow Fever*. — The regulations will be found in the "Directions regarding the Sanitary Treatment of Sea-going Vessels in German Harbours" of August 29, 1907. *Stegomyia* does not occur in Germany, nor could yellow fever virus develop in our temperate climate.

5. *Plague*. — Extermination of rats, specially in ports, on land and on suspected ships. Isolation of sick persons and suspected cases, isolation or observation of persons suspected of carrying infection for a period of 10 days — in other respects as in the case of cholera.

6. *Smallpox*. — Periodic vaccination of children (German Reich Vaccination Law of April 8th, 1874), compulsory vaccination of all persons who have come in contact with cases of smallpox suspected of being directly or indirectly infectious; vaccination of doctors, persons engaged in nursing, persons in charge of corpses, *post-mortem* examiners, workers in the rag trade, notaries (*Urkundspersonen*), ministers of religion, persons carrying out disinfection, washerwomen, etc. ; fixing of time-limits for voluntary vaccination of the inhabitants on the outbreak of smallpox, isolation of sick persons, and persons suspected of being sick or of being directly infectious. The last-mentioned are under observation for a period of 14 days. (There were 19 Government and three private institutes under Government supervision obtaining vaccine lymph in existence in the German Reich in the year 1918.)

B. CONTAGIOUS DISEASES.

It will suffice to quote here the stipulations contained in the Prussian Law of 1905 and in the executive regulations relating thereto with regard to the contagious diseases made notifiable by that law, inasmuch as those in force in the other German States are similar in their form or in their effects. The following measures represent the maximum which may be ordered in extreme cases of the diseases in question.

The measures adopted in respect of *sick* persons are only to be *discontinued* at the recovery, transfer to hospital, or decease of the patient, but in all cases only when the prescribed final disinfection has taken place, and, as regards *persons suspected of suffering* from puerperal fever, relapsing fever, typhoid or glanders, when the suspicion has proved ill-founded and in the case of typhoid and dysentery, when at least two bacteriological analyses have given negative results.

1. *Diphtheria*. — Isolation of sick persons, subject to the qualification that the removal of children to a hospital or to some other appropriate institute may be ordered against the wishes of the parents, if, in the opinion of the public medical officer, or of the doctor in charge of the case, isolation can be adequately guaranteed at home ; isolation is suspended if the absence of diphtheritic bacilli has been pro-

at least three analyses taken at intervals of three to five days ; prophylactic inoculation with anti-toxic diphtheritic serum ; restriction of the movements of the professional nursing staff ; control of the industrial manufacture of articles likely to spread the disease (Article 15 of the Reich Law), prohibition of attendance at school or at any educational institute, disinfection (including the mucus of the nose and throat, and water used for gargling), precautions in respect of corpses.

2. *Infectious Cerebro-spinal Meningitis*. — Isolation of sick persons (discharge only after negative bacteriological analyses) ; disinfection as in 1.

3. *Puerperal Fever*. — Restriction of the movements of midwives and monthly nurses ; disinfection of purulent excretions and dressings ; doctors and other persons engaged in the medical profession must, when called in to treat a woman suffering from puerperal fever, inform the midwife who is, or has been, employed in the case. Midwives and monthly nurses in attendance on a woman suffering from puerperal fever during delivery or confinement, are prohibited for the period of their employment, and within eight days after the end of such period, from undertaking other work as midwives or monthly nurses. After the expiration of this period, they may only resume work after a thorough washing and disinfection of the body, underlinen, clothing and instruments in accordance with the instructions of the public medical officer. They may, however, resume professional work before the expiration of eight days if the public medical officer has no objection.

4. *Trachoma* (granular or trachomatous). — Observation of persons suffering suspected of suffering from the disease ; disinfection as in 3. Patients with purulent excretions must be provided with separate beds, washing utensils and towels. In the absence of proof of medical treatment, such treatment is ordered compulsorily. In more seriously affected districts, more vigorous preventive measures are adopted (examination by special trachoma experts, treatment of children by nursing sisters and teachers).

5. *Pulmonary and Laryngeal Tuberculosis* — Disinfection as in 1. In the event of change of residence, the dwelling must be disinfected, at any rate in cases in which the disease has reached an advanced stage.

6. *Relapsing Fever*. — Observation and destruction of blood-sucking insects in the case of persons suffering, or suspected of suffering from the disease ; isolation of sick persons ; distinctive marking of dwellings and houses ; restriction of the movements of the professional nursing staff ; prohibition or restriction of large gatherings of persons if the disease has assumed an epidemic character ; control of shipping ; prohibition of attendance at schools and other places of education ; cleansing of dwellings and buildings ; disinfection (destruction of blood-sucking insects).

7. *Contagious Dysentery*. — Isolation of sick persons (suspension of isolation after two bacteriological analyses of the fæces carried out at intervals of eight days have given negative results. If this is not the case, isolation is suspended 10 weeks after the patient fell ill, but the patient is treated as a *carrier case*) ; prohibition of large

gatherings in the event of an epidemic of the disease ; prohibition of attendance at places of education ; prohibition or restriction of the use of waterworks ; cleaning of dwellings or buildings ; disinfection (especially of fæces). Precautionary measures in respect of corpses. Measures against flies. Distribution of pamphlets on dysentery.

8. *Scarlet Fever*, as in 1.

9. *Syphilis, Gonorrhœa and Chancre*. — In the case of professional prostitutes, observation of persons suffering or suspected of suffering from these diseases, persons suspected of carrying infection ; isolation of sick persons ; compulsory treatment, if necessary ; recommendation of a Wassermann blood test in the case of nurses.

10. *Typhoid Fever* (paratyphoid and poisoning by meat, fish or sausages, which may be treated as analogous to paratyphoid). — Observation of persons suffering or suspected of suffering from these diseases ; isolation of sick persons (suspension of isolation as in the case of dysentery, except that the urine must also be examined) ; inoculation of doctors and nursing staff and restriction of the movements of the latter ; distinctive marking of dwellings and houses ; control of the manufacture of articles as in 1 ; prohibition of public meetings as in 6 ; prohibition of attendance at places of education ; prohibition of the use of waterworks ; measures in respect of dwellings and corpses as in 7 ; disinfection (especially of the fæces and urine) ; measures against flies ; distribution of pamphlets on typhoid fever.

As regards 1, 2, 7, and 10, *carrier cases* should have their attention drawn to the danger they constitute for those with whom they associate, and they should be recommended to take the necessary precautions with regard to disinfection ; in the case of 1 and 2, regular swabbing with disinfectants of the mouth and nose ; in the case of 7 and 10, a separate water-closet if possible, and a thorough cleansing of the hands after every evacuation of the bowels (and in the case of typhus after every urination also) ; separate washing of underlinen, prevention from handling foodstuffs ; distribution of pamphlets to persons suffering from a permanent discharge.

11. *Anthrax*. — Control of the industrial manufacture, handling, storing, and sale of articles liable to spread the disease, in addition to the necessary measures for preventing its spread ; disinfection (of purulent excretions and dressings) ; precautions in respect of corpses.

12. *Glanders*. — Observation of persons suffering or suspected of suffering from the disease ; isolation of sick persons ; disinfection of purulent excretions and dressings ; precautions in respect of corpses.

13. *Hydrophobia*. — Isolation of sick persons ; observation of persons suspected of carrying infection, *i.e.*, persons who have been bitten by hydrophobic animals ; animals suspected of being hydrophobic ; inoculation of these persons against hydrophobia.

14. *Trichinosis*. — Compulsory notification and investigation ; treatment of persons, if possible, in hospital.

As regards 3, 6, 10 and 12 : cases in which puerperal fever, relapsing fever, typhoid fever or glanders is suspected are to be treated in the same way as actual cases of these diseases, until the suspicion has been proved unfounded.

In the case of 4, 6 and 10, the restriction of movements is applicable in accordance with Articles 24 and 25 of the Reich Law, if the State Ministry so orders.

As regards 11, 12, 13 and 14 : the detailed regulations in respect of diseased animals will be found in the Imperial Law on Diseases of Cattle, June 26th, 1909.

With regard to the *exclusion* of sick *teachers* and *pupils* from *places of education*, the States of the German Empire have issued special regulations, not confined to diseases which are dangerous to the community and notifiable infectious diseases, but applicable to all the infectious diseases referred to here. The regulations in force in Prussia were issued on July 9th, 1907, and amended on November 20th, 1913 and August 16th, 1914.

With regard to *disinfection* in the case of individual notifiable infectious diseases, new and somewhat simplified regulations were issued in Prussia by the Minister for Public Welfare on February 8th, 1921 ; attention is again drawn in these regulations to the extreme importance of "continuous disinfection".

With regard to the transport of *infectious corpses by rail*, the Reichsrat Resolution of 1907, the Railway Traffic Regulations of 1908 and the Circular of the Reich Ministry of the Interior of 1918 contain detailed provisions for precautionary measures to prevent the spread of disease (metal coffin for the corpse, wooden-casing to the metal coffin, and authorisations for the transport of corpses). The corpses of persons dead of smallpox, cholera and plague may not be transported for one year following death. Regulations for the *transport of corpses by sea* are contained in the Chancellor's Order of 1906.

III. OTHER INFECTIOUS DISEASES.

(Information with regard to notification has already been given in A (a) 1.)

1. Measles.

In the event of its appearance on a large scale, investigation on the spot by the public medical officer, who decides upon the necessary protective measures and communicates them to the school inspection authorities and the Landrat. The measures are : the closing of individual school classes ; in the event of measles in the family of a teacher who lives at the school, the closing of the school, if effective isolation of the sick person is impossible, or if it is impracticable or considered undesirable to remove him to hospital ; separation of the teacher from the sick person if necessary (special clothes to be worn in school). If the number of cases increases, closing of the whole school, closing of orphanages, kindergartens, etc. ; scouring of classrooms

and school tables with solution of soft soap ; thorough airing. If necessary, notice to be made compulsory in watering-places and health resorts. (Prussian Ministerial Decree of June 21st, 1910.)

2. *Whooping-cough.* — As in 1.

Separation of sick children from their brothers and sisters and from nurses and kindergartens.

3. *Epidemic Infantile Paralysis.*

If there is a large number of cases, distribution of Imperial Health Office pamphlets : "Recommendations to doctors in regard to infantile paralysis". Sanitary police measures as in the case of cerebro-spinal meningitis.

4. *Malaria.*

Distribution of Reich Health Office pamphlets : "The mosquito plague and its prevention", and of the pamphlets issued by the Prussian Ministry for Public Welfare entitled "Memorandum for doctors with regard to the prevention of malaria". Measures to be taken for the prevention of the mosquito plague. Isolation and protection of patients against mosquitoes. This disease has not become serious in Germany in spite of the return of many germ-carriers after the war. The administrative district of Aurich, in Prussia, has long been a centre of the disease.

5. *Influenza.*

Legal measures of prevention were ineffective in the frequently high mortality epidemics which have occurred in Germany (1889-1892, 1907-1908, 1918). Admission to hospital, so far as possible, of serious cases. Instruction of the public, through the Press, in regard to infection. In Prussia, the Minister for Public Welfare has been notified weekly of the number of persons admitted to hospital suffering from influenza and encephalitis lethargica.

6. *Tetanus.*

Cure by the early utilisation of tetanus anti-toxin in the case of wounds which have been fouled with earth or road-dust, and also, in particular, in the case of bruises.

7. *Ankylostomiasis (Worms).*

Examination of the faeces of all mining gangs and of brick and tunnel workers ; treatment of sick persons and prohibition of work in the case of worm-carriers ; establishment of special closets with buckets.

8. *Hair and Skin Diseases.*

Favus occurs so seldom in Germany that it is practically of no importance. Exclusion of those suffering from it from school until they are cured. *Sycosis barbi.* Inspection of barbers' shops, instruction of the barbers through the intermediary of their corporations, continuous disinfection of implements. Prussian pamphlet on

bers of June 24th, 1918. Imperial Health Office pamphlet of 1918 on skin fungus diseases. Observation of children in schools ; exclusion of the sick person from school instruction, exclusion of sick persons from barbers' shops. *Scabies*. Prohibition of attendance at school until the patient has been healed.

II.

3. A (b). *On the Campaign against Tuberculosis.*

The tuberculosis campaign in the German Reich has for many years been organised by the *German Central Committee for the Prevention of Tuberculosis*, which is a private body with a semi-official character. The governing body (Präsidium) consists of the presidents of the Reich Health Office, the Reich Insurance Office and the Reich Insurance Association for Employees, a representative of the Reich Ministry of the Interior, of the Prussian Ministry for Public Welfare and of the Prussian Ministry for Science, Art and Education and also of eminent doctors. The governing body is assisted by an advisory committee, composed of the authorities of the provinces and administrative districts, the directors of the provincial insurance associations and of the funds, the "Landräte" and the "Bürgermeister" of towns which are not attached to a *Kreis*, doctors attached to sanatoria and tuberculosis specialists. The money required is provided mainly by Reich contributions (alcohol monopoly fund, etc.) and by the lotteries authorised by the Prussian State ; the Association makes grants to sanatoria and welfare institutes. Its work consists of :

1. *The education of the population* by means of pamphlets, instructional booklets, photographs, placards, two travelling museums, a travelling tuberculosis exhibition and instructional films.

2. Promoting the erection of sanatoria and welfare institutes. The number of sanatoria for adult patients in Germany in 1922 was 170, containing 180,046 beds, while the number of children's sanatoria for children suffering from diseases of the lungs or from tuberculosis of the bones or joints, or children threatened with tuberculosis, or who are scrofulous or in need of a rest cure, is 257, containing 18,983 beds. There were also 164 forest recreation establishments, 21 forest schools with a full school course, and four land colonies for adults and children. There are 37 convalescent homes for persons suffering from closed tuberculosis. There are 86 observation stations for selecting patients for sanatoria. Finally, there are 339 tuberculosis hospitals, tuberculosis wards in general hospitals, homes for invalided soldiers and nursing establishments.

The development of *consumption welfare institutes* is entrusted by the Central Committee to a specially appointed Commission, which institutes training and post-graduate courses for doctors, consumptives and nurses. Special central offices have been set up in the various States and provinces for expanding the welfare institute system. There were 3,000 institutes in existence in the German Reich in 1922. Out of 906 institutes controlled by doctors, which send annual reports to the Central Committee, 27 % were municipal, 37 % mixed (for town and country) and 36 % rural, while 1,912 nursing sisters were employed in them. About 52 % of the whole population of the Empire were cared for by these institutes. On an average, there were 367 medical examinations per 10,000 inhabitants. Out of 906 institutes, 700 were principal and 206 auxiliary institutes. Medical treatment is not given in the institutes. An important part of the work of the nurses consists in visiting families and investigating as fully as possible cases of consumptives or persons threatened with tuberculosis.

3. The prevention of tuberculosis among that section of the population (the middle-classes), which is not compulsorily insured, by means of treatment in sanatoria, the formation of information bureaux, visits to families and dwellings, and the establishment of tuberculosis funds.

4. The prevention of lupus: removal of as many patients as possible to the sanatoria, of which there are about fifty, if necessary free of charge; improvement of methods of treatment and nursing; distribution of pamphlets on lupus.

The Reich organisation referred to receives valuable support from the central associations in the various States. In *Prussia*, the latter are organised according to provinces; in *Bavaria*, there is a State association; in *Saxony*, an expert committee in the State Office for Public Welfare; in *Württemberg*, an expert committee of the State Health Council; in *Baden* and in the two *Mecklenburgs*, State Associations. Those responsible for social insurance also give considerable support to the campaign against tuberculosis, in particular, the State Insurance Associations, the Reich Insurance Association for Employees, the Railway Workers' Pension Funds, the Mining Provident Associations, the Union of German Post and Telegraph Officials and the Union of German Teachers. The authorities responsible for welfare institutes are the Communes, the Welfare Unions of the *Kreise*, the Women's National Unions, the Unions for the Care of the Consumptive, the Sickness Funds, etc.

No statutory regulations for the tuberculosis campaign have as yet been issued for the whole of *Germany*. Hitherto, the States have only passed laws on certain special matters. Reference has already been made in Section A (a) 1. to the compulsory notification of deaths due to pulmonary and laryngeal tuberculosis. In some States notification is also compulsory in cases of advanced tuberculosis in the event of a change of residence or in the event of persons associating with the patients being exposed to serious danger, while in certain others, all infectious cases must be notified. A Tuberculosis Bill was recently laid before the *Prussian Landtag*. Under the terms of this

infectious cases of and deaths due to pulmonary or laryngeal tuberculosis must be reported to the competent medical officer for the place of residence or the place where death occurred within eight days — deaths within twenty-four hours.

Reich Law for the prevention of tuberculosis would entail State control of the tuberculosis campaign. Prevention would include the care of the sick and the protection of those associating with them. The central factor in the campaign would be the establishment throughout Germany of institutes, which would be freely accessible to everyone. The State authorities would have to compel the Communes to erect welfare institutes, sanatoria, rest homes, etc. Every infectious case of pulmonary and laryngeal tuberculosis and every death due to any form of tuberculosis, and likewise change of dwelling or place of residence of consumptives (including cases where the patient is openly taking a cure at a health resort), would have to be made notifiable. Notification would have to be sent to a public health office. The latter would then decide, in conjunction with the doctor in charge of the case, what measures were necessary for treating patients and for preventing infection ; the carrying out of these measures might perhaps be entrusted to the welfare institute. The measures to be taken would be based upon an investigation of the health conditions of the family of the patient or deceased (examination of the patient and persons living with him, especially children and adolescents).

The patient would be kept under observation ; if he should be a cause of serious danger to those associating with him (*e.g.*, in consequence of continuous non-observance of the regulations), he would be moved to a hospital ; children and adolescents living with him would, if necessary, be housed elsewhere.

Continuous disinfection and possibly a final disinfection (free of charge, if requested) would be enforced. Persons suffering from infectious tuberculosis would perhaps be prohibited from engaging in certain occupations, or only permitted to engage in them to a limited extent ; this provision would apply in particular to nursing or attending non-tuberculous persons (*e.g.*, teachers and tutors, employees in families with children, children's homes, girls' schools, etc., and wet nurses), or the handling of food. Children and adolescents with infectious tuberculosis should not be allowed to associate with healthy children in education. Foster-children should not be put to nurse in families in which there are persons suffering from infectious tuberculosis.

II.

3. A (c). *The Campaign against Venereal Diseases.*

As there are no current statistics in Germany, similar to those compiled in Denmark, for example, with regard to the spread of venereal diseases, we are unable to give information as to the incidence of gonorrhœa, soft chancre and syphilis among the German population. Definite data could only be obtained if doctors were obliged

to notify cases ; a statistical review would, however, still be inaccurate on account of the very large number of persons who treat themselves or are treated by quacks.

Non-official lists made by doctors of the number of patients undergoing medical treatment at any given date are, of course, only an inadequate substitute, as the result depends entirely on the extent to which the doctors co-operate in the work. A census of this nature was taken in Prussia in 1900, but was limited to a single day, while in 1913 a similar census was taken for one month in 37 of the larger German cities, and in 1919 for the same period for the whole of Germany. In regard to the distribution of venereal diseases as between town and country, all accounts agree that the incidence is heaviest in the big towns and ports (in the latter because there is a relatively much larger number of unmarried persons between the ages of 15 and 30, the most seriously menaced ages) and lightest in the country. The 1919 statistics, which were undertaken owing to the apprehension of a tremendous spread of venereal diseases in consequence of the hurried demobilisation and the deterioration of morals during and after the war, showed for the period under review, according to the estimates made in the Reich Health Office in respect of patients under treatment and patients admitted to hospital, a minimum of 22.3 venereal patients per 10,000 inhabitants (Berlin 100, Bremen 76, Hamburg 67, Lübeck 49, Saxony 29, Prussia 22, Bavaria 19, Lippe about 5).

The number for the Federal States, compared in respect of their whole area, do not differ appreciably from the average figure for the whole of Germany ; comparative figures show 28.5 for Saxony, 22.1 for Prussia, 18.4 for Bavaria, 18.7 for Thuringia and 18.1 for Baden. South Germany, which has few large towns, was less seriously attacked than North Germany, where they are numerous.

It is extremely difficult to make a comparison of the three sets of statistics mentioned, as such a comparison would depend upon the area and the period under review being identical, and upon the doctors having co-operated in the work to the same extent on each occasion. The only statistics which can be compared are those of 1913 and 1919 in respect of the same cities. Unfortunately, however, there is a considerable variation in the amount of information obtained from doctors' returns in the two years referred to. It may be estimated, however, that there was an increase of about 20 % in venereal disease in these towns during the war. If, however, we recollect that the war made enormous gaps in the age-groups which are most seriously attacked by venereal disease, we cannot help suspecting that in 1919 the incidence was higher among women. The not very important increase in venereal diseases in the post-war period as against the years prior to the war may be accounted for by the fact that, in the big towns, and in the case of the male sex, a high point had already been reached before the war.

The records for the purely rural areas in Germany showed in the main a favourable result. Information was received, however, from certain districts that venereal diseases had been found to exist in villages in which they had previously been entirely unknown. The returns of November 15th, 1919, showed the following figures:

inhabitants : Schaumburg-Lippe, 0.3 ; Lippe, 0.4 ; Waldeck, 0.6 ; Württemberg, 0.3 and 4.6 per 1,000 inhabitants.

In regard to distribution by age, sex and status in respect of marriage, the returns from certain large towns showed that venereal disease occurred most frequently in men and women of from 20 to 25 years of age. In the case of both men and women, the most numerous cases occurred amongst the unmarried, and next among divorced, widowed and widowed persons in that order.

The campaign against venereal disease has consisted hitherto, in the States of the German Reich, in the sanitary police control of professional street and brothel prostitution by means of the supervision, inspection and compulsory treatment of prostitutes. As regards syphilis, gonorrhœa and chancre, persons who are diseased or suspected of being diseased or of carrying infection, may, under the Prussian Contagious Diseases Law of 1905, if they are professional prostitutes, be subjected to observation in case of illness, to isolation. This was also the practice at a previous date (Prussian Regulation of 1835 and Decrees in the other States). The much greater damage to health involved in secret prostitution was only lessened by these measures in so far as women discovered to be engaged in it were subjected to inspection and treatment, and, if necessary, placed under supervision. The other measures for the campaign remained in the hands of doctors and sickness funds. Rudimentary instruction in the matter has been imparted since that date by the *German Society for Combating Venereal Diseases* and the *Popular Hygienic Education Committees* by means of pamphlets, itinerant lecturers and exhibitions. The *Decree of the Reich Government, November 1st, 1919*, authorised the compulsory medical treatment of all persons suffering from venereal diseases and provided penalties in the case of persons knowingly spreading infection. Doctors were made responsible for instructing their patients ; they were required to give their patients official instructional pamphlets, both upon diagnosis and upon discharge. The Reich Government gave considerable subsidies for six months towards the initial erection of Consulting Offices ("Beratungsstellen") with medical experts, to which definite districts were assigned, and the sickness funds, and State Insurance Associations also gave assistance. The latter included, at the end of 1922, more than 180 consulting offices, which were increasingly added from 1920 to 1922. The current annual expenditure in 1920 amounted to more upon three million marks. Of the 86,456 cases of venereal disease (including children under 14 years of age) reported in 1920, 29 % of the men and women were married. The number in 1922 was 91,019. As venereal diseases cannot be suppressed by remedies alone, the *Consulting Offices*, which are also used for purposes of health control, are appropriate social institutions for assisting in the campaign. The closer the net is drawn, the better will they fulfil their purpose. Treatment is not confined to them. Further, the *Reich Insurance Office*, in its general decision of December 1920, conferred upon sickness funds the right of embodying in their health regulations the compulsory notification of venereal diseases in the case of members and of non-insured relatives.

The draft of a *Reich Law for combating venereal diseases* contains further safeguards for the public, which could not be included in the aforementioned Draft. Patients are required to obtain treatment from a doctor who is qualified to practise in Germany. All persons (including, therefore, male persons) who are suspected of having contracted a venereal disease and of being liable to infect others, may be required by the health authority to submit a health certificate, issued by an officially authorised doctor; they may, if necessary, be compulsorily subjected to a clinical examination (need be, in hospital). Any person failing to attend for treatment must be reported to the doctor to one of the Consulting Offices. The latter reports the patient to the local health authority should he refuse to comply with its instructions. Consulting offices and health authorities are penally responsible for observing secrecy. Information may, however, be given to duly qualified persons. The instruction of patients and the issue of pamphlets remains, as before, part of the duty of the doctor treating the case. An adequate number of consulting offices is to be established throughout Germany. Any person who suffers from a venereal disease involving risk of infection, and, notwithstanding this, nevertheless indulges in sexual intercourse or contracts marriage without mentioning his condition, is liable to imprisonment. Further, the treatment of venereal patients by non-medical persons, treatment by correspondence and offers of treatment are to be prohibited. Regulations will also be issued in respect of syphilitic wet-nurses and breast-fed children suffering from syphilis, and penalties imposed in cases of infection thereof. Remedies, articles and methods of treatment for curing or alleviating venereal disease must not be publicly supplied, recommended or exhibited. Announcements or recommendations may, however, be sent to doctors, chemists and to persons who are permitted to deal in remedies of the kind, or published in medical or pharmaceutical scientific journals. Prophylactics must not be advertised in a manner calculated to offend morality or decency.

Enticing to private houses (*Wohnungskuppelei*) will, in future, only be punished when it involves exploitation or the inducing or compelling of the person concerned to engage in prostitution.

With regard to the regulation of prostitutes, two proposals have been laid before the Reichstag. One rejects the idea of regulation and proposes that only persons who solicit or offer themselves for immoral purposes in a manner contrary to morality and decency should be punished. According to the other proposal, the issue of regulations for the control of professional prostitution would be left to the individual States, inasmuch as conditions are not everywhere the same.

The acceptance of the Law (and it will undoubtedly be accepted) will ensure uniformity in the measures for combating venereal disease — a matter which has of immense importance to the national welfare. Any such statutory regulations must be supplemented in the hospitals by the thorough hygienic education of prostitutes as regards self-protection against infection.

Welfare measures, e.g., work undertaken by female welfare workers employed by the police authorities, municipal welfare offices or women's societies, also plays

effective part in reforming girls who have fallen, by helping them in financial difficulties, finding employment for them and giving them moral support. Instruction in sexual matters must be given to the young by their parents and teachers, at any rate in the big towns, before attaining the age of 15, as cases of infection are frequently observed at that age.

Regulations on these lines have already been issued by the *State Welfare Committee Tecklenburg-Schwerin*, where district welfare offices have been established, each with a matron and a female welfare worker, aided by doctors and working in co-operation with the State Insurance Office and the Sickness Funds.

II.

3 B (a). — *The Protection of Maternity, Babies and Children.*

The protection of female workers and employees of small means is regulated by the Reich Maternity Welfare Law of June 9th, 1922. The following benefits are provided :

(1) Medical treatment, if required, in confinement or pregnancy troubles ;

(2) A single grant towards the other costs of confinement or pregnancy troubles ;

(3) A maternity allowance for 10 weeks, not less than six of which must follow confinement ;

(4) A nursing allowance for the period during which the mother nurses her child, up to and including the twelfth week after confinement.

Under Article 137 of the Reich Industry Regulations, working women must be absent from work before and after confinement for a period of eight weeks in all. Their return to work is conditional upon proof that not less than six weeks have passed since their confinement.

Advice is given to mothers in the numerous *Infants' Welfare Institutions* which have been established over the whole of Germany and are generally under the control of the local communes. This system of out-patients' welfare work (*"offene" Fürsorge*), including a staff of doctors and nurses, has developed extraordinarily, but the number of welfare offices — which are open to legitimate and illegitimate children alike — is not known. The training of *welfare doctors* (see Section II.—1 (b)) and *nurses* is carefully regulated in most States of the Reich, and particularly in Prussia. The nurses (including nurses for other branches of welfare) are officially examined and receive an official diploma as baby-nurses. Treatment is not given in the consulting offices. These welfare institutions are generally the most suitable for country districts.

In the towns there is frequently, in addition to the above, a system of welfare

work for *in-patients* ("*geschlossene*" *Fürsorge*), which is carried on by *meary infants' homes* and *infants' nursing-homes* and *clinics*. We may mention, as one of the best examples, the *Kaiserin-Auguste-Viktoria-Haus* at Charlottenburg, Berlin, which is an Imperial institution for combating infant mortality with a welfare department for "in" and "out" patients, a school and advanced training department for nurses, etc. These institutes are also mainly used for the treatment of sick infants.

There are also numerous *crèches* ("*halboffene*" *Fürsorge*) which co-operate in the work of safeguarding health.

The most important measure for combating infant mortality and for rearing healthy children is, as hitherto, the thorough instruction of mothers (education of the higher classes at schools, lectures at the peoples universities (*Volkshochschulen*), etc.), in the appropriate feeding and care of infants and babies. Many factories have instituted rooms for feeding infants (*Stillstuben*).

The care of *foster-children* (*Ziehkinder*) is regulated by statutory protective measures. In *Prussia* the *Kreis* medical officer must visit the children regularly to inspect the homes in which they are being cared for.

The entire welfare system is placed under the *supervision of the public medical officers*, who must make it their duty to improve the system in all respects; they must visit the institutions for lying-in patients or infants annually, and devote special attention to the investigation of the problem of infant mortality. *Popular pamphlets* entitled "Mothers, take care of your babies in the hot weather!", "Advice on rickets", etc., have been used with success in the campaign.

The welfare of *young children* also receives attention in the institutions referred to. Kindergartens and recreation schools for infants are placed under the supervision and intendency of the public medical officer.

The entire welfare system has been co-ordinated with great foresight and thoroughness in the State Welfare Office in *Saxony* (Department IV of the Ministry of the Interior) with expert committees on the care of infants and young children and on the care of the tuberculous and deformed. The State is at present divided into three districts for purposes of welfare work.

The entire juvenile welfare system of the Empire has been transferred, by the Law of July 9th, 1922, to the *Juvenile Welfare Offices* (*Jugendämter*), which are to be formed. The work of these offices consists in proposing, promoting and, if necessary, establishing institutions and organisations for :

- (1) Advice in matters affecting the young ;
- (2) Maternity protection prior and subsequent to birth ;
- (3) The welfare of infants ;
- (4) The welfare of young children ;
- (5) The welfare of children of school age when not in school ;
- (6) The welfare of juveniles who have left school.

Special attention is paid in this connection to the protection of *foster-children* (*Hallekinder*).

In addition to other training departments, the Kaiserin-Auguste-Viktoria-Haus, in conjunction with the German workers' syndicate of the German trade unions concerned, has recently opened a *health welfare school* for all relevant subjects, with a 2 years' course (1 $\frac{1}{2}$ years theoretical and half-year practical) and with recapitulatory and advanced courses.

In the Prussian Welfare Ministry a central office and a State advisory commission on juvenile welfare have been founded. In 1922 there were in Prussia 202 athletic, recreation and playing-grounds, 172 homes for the young, 28 indoor swimming baths, 54 gymnasia and 56 hostels for the young.

II.

3 B (b). — *School Hygiene.*

In 1911, there were in Germany, in round numbers, 11 $\frac{1}{2}$ million school-children distributed among 67,000 schools (excluding infants' schools, continuation schools and elementary teachers' training colleges). The bulk of the Government measures deal with the hygiene of the *school buildings*. National and communal schools are established on the soundest hygienic principles. Many new schools were built and old schools transformed in the country districts; this was greatly encouraged in Prussia by the School Maintenance Law of 1906, which ensures considerably higher subsidies from the State. Attention was paid to the following points : (a) school buildings : building-site, neighbourhood, aspect, water-supply, corridors, stairs, changing-rooms ; (b) school-rooms : size, desks and other equipment, lighting, ventilation and heating ; and also lavatories, playgrounds and gymnasiums, and where possible, baths and refectories. In Prussia, the *Kreis medical officers* give assistance, as required by their service instructions, in the examination of building projects, hold inspections, in accordance with an official formula, of the national schools, higher education — institutes (*Gymnasien*, *Seminare*), reformatories, etc., every five years, and make proposals for removing defects to the Educational Department of the district administration. These inspections also include supervision of the school-children by the medical officers of health, special attention being paid to the number of children per cubic foot, cleanliness, general conditions of health, cases of infectious disease, shortsightedness, deafness and other infirmities. Preventive measures against infectious diseases in schools are laid down in the Reich Epidemics Law of 1900 and the Prussian Epidemics Law of 1905, and particularly the Ministerial Order of 1907, which also specifies measures for the regular cleaning of the schools. Other decrees deal with the care of backward, blind or deaf and dumb children, school inspections by dentists, alcohol, gymnastics for girls, juvenile games and continuation courses in school hygiene for teachers. The Governments of the other German States have taken similar measures. In Saxony a Decree was issued

on May 15th, 1923, in regard to the procedure to be adopted by the school authorities on the outbreak of infectious diseases.

The official medical authorities are unable to undertake a full investigation of the cause of disease and delicate health in relation to schools, as a comprehensive review could only be obtained by systematic individual inspections and few medical officers have sufficient time at their disposal. From 1889 onwards, however, in the larger urban communes began to appoint special *school doctors* for the purpose of exercising permanent medical supervision over school children. This system is in the process of expansion. No uniform regulations for the service of school doctors have as yet been issued in the various German States. Thus in Baden, Hesse and Schleswig-Holstein, there are school doctors for all national schools, in Saxony, Meiningen, Coburg-Gotha and Reuss for all national and secondary schools, in Saxe-Altenburg there are State doctors for the State schools and communal doctors for the communal schools, while in Württemberg, Oldenburg and the Hansa towns there are State doctors for both the State and the private schools. In Prussia there are usually school doctors available for the national schools in the larger towns, but this is only occasionally the case in the smaller towns and in the country districts. The secondary schools, including those of the State, usually have no school doctor, and the same applies in general to the "Seminare", elementary teachers' training colleges and infants' schools.

For the training of school doctors in Prussia, see Section II i (b), Württemberg alone makes provision for doctors in continuation schools. Under the service regulations, school doctors must not interfere with the rights of parents, of the school authorities or of general practitioners. They must examine the children at any rate at the beginning and end of the term, weigh and measure them regularly, keep a health-sheet for each child and give advice to parents and teachers. Uniform statistics are of particular importance for the development of a school. School statistics are kept in a large number of towns, such as Berlin, Hamburg, Breslau, Mannheim, etc., but they are only of local value, as there is no common standard of comparison. The decision made by the Reich School Conference of 1920 for Reich school statistics is justified, but owing to the variations in the circumstances of the different German States, its action at the present date must be restricted to paving the way for them. A statistical enquiry would even now be feasible in the national schools of the larger towns and perhaps also in particular schools in other communal groups in the State. The Reich Health Office, with the assistance of members of the Reich Health Commission and of experts, has drawn up standard forms for this purpose, *e.g.*, for entrants, pupils leaving school, school-children placed under State supervision for official purposes (Überwachungsschüler), invalids, etc.

Further, the *Teachers' Associations* and especially the *German Union for School Hygiene*, have done very useful work; and the newly-formed committees of parents may also do much to further the movement. Welfare work for children of school age includes half holidays for games, swimming lessons, excursions, school festivals and holidays in the country. Great attention is also paid by means of games

to the physical improvement of boys and girls who have left school (*e.g.*, in the meals provided by the State Juvenile Welfare Committees). The opportunity to weigh and measure school-children, the results being put into form (see special Annexes of No. 37, 1922, and No. 7, 1923, to the publication of the Reich Health Office).

II. 3 B (c). — *The Campaign against Alcoholism.*

In Germany the State authorities have always given the fullest attention to the consequences of alcoholism, *e.g.*, the deterioration or destruction of efficiency, increased delicacy of health and mortality, undermining of family life, degeneracy of children, and increased crime and vagrancy. The following measures have been taken by the Government : the establishment of a *Reich monopoly for the production and sale* of spirits, entailing higher prices and consequently lower consumption ; prohibition of retail sale on pay days in certain highly industrialised districts ; prohibition of the hawking of spirits, encouragement of the establishment of temperance societies ; encouragement of the production of non-alcoholic refreshing and stimulating drinks ; licensing regulations ; control of imports ; general popular education ; and legislative measures for placing drunkards under guardians or trustees and confining them in sanatoria.

A considerable percentage of the surplus proceeds of the brandy monopoly (amounting to 20,000,000 marks in 1922) is applied annually to the combating of alcoholism and the diseases consequent thereon, such as tuberculosis and venereal diseases, to subsidising the establishment of teetotal inns, young people's clubs and societies ; to instituting training courses for juvenile welfare workers and officials of philanthropic societies, and to educational work (anti-alcoholic exhibitions, touring lectures, etc.). In addition to the State administrations, the large private welfare organisations also receive considerable financial assistance. (Prussia co-ordinated measures for the combating of the abuse of alcohol" in its Decree of November 1920). A *Reich Licensing Law* is in preparation which makes provision for the following : careful consideration of the needs of the population ; investigation of the character of the licensee and of his representative ; the taking-over of the management of public-houses by the communes ; the regulation of the sale of bottled spirits ; prohibiting the serving of spirits to children and young persons or to drunken and rowdy persons ; the fixing as far as possible of uniform hours of business, etc. Measures in regard to confirmed drunkards are contained in the draft of the *New Criminal Code*, and the restriction of imports is being proceeded with. The Reich Insurance Regulations and the Employees' Insurance Act Law provide for the payment of insurance benefits to confirmed drunkards in kind instead of in cash.

In addition to the efforts of the public authorities, excellent work is carried on by private organisations such as the State Associations, welfare offices, unions for combating the abuse of alcoholic liquors (temperance unions), teetotal associations

(total abstinence unions, Blue Cross, Good Templars), religious bodies, etc. activities of these organisations include the enlightenment of all classes of the by means of lectures and pamphlets, by demonstrating the evils of alcohol and recommending the use of non-alcoholic beverages ; the prevention of drink excess among the better educated classes ; the giving of advice to drunkards of families by doctors or trained workers at the welfare centres ; the admission of patients to homes for the cure of drunkenness, and the assistance of discharged patients. Permanent cures can be effected if cases are taken in hand at an early stage and the patients discharged as cured by the homes are admitted with their families to temperance societies. In the case of persons who have taken to drink on account of feeble-mindedness, even the most specialised treatment rarely meets with success.

One of the most active organisations is the *German Temperance Union* which works in close co-operation with the authorities of the Reich and of the States, with municipalities, churches and schools, and with the social insurance agents. In conjunction with the Central Association for the combating of alcoholism, formed by the amalgamation of the German abstinence societies, this organisation has established a *Reich Temperance Office* in Berlin, and maintains some 225 welfare centres in the Reich, which it desires to cover with a network of similar establishments. These centres are open at regular hours for consultation and are under the direction of a minister of religion, an administrative officer or a doctor ; men and women workers carry out valuable visiting work of an educational and practical nature. The Union carries on active recruiting, issues "pamphlets for practical temperance work" and organises courses of training for temperance workers. The work of the temperance societies is assisted by the State Insurance organisations, sickness Insurance, Trade Associations, and also very largely by private charity.

In consequence of the shortage of alcohol and the strict measures taken by military and civil authorities during the war, there was a marked decrease in the number of persons admitted to public and private *lunatic asylums* in Germany as a consequence of alcoholism. As compared with 6,264 men and 328 women admitted in 1914, the figures for 1918 were 944 and 168 respectively in the whole of Germany. In 1919 the figures were 1,305 men and 176 women, and in 1920, 2,115 men and 263 women. There is therefore unfortunately a slight increase. In Prussia, 1,114 persons in 1914 were admitted to the hospitals on account of alcoholism ; in 1918 the figure had fallen to 1,886. In 1920, the latter figure was unfortunately doubled. In 1913, suspension of civil rights was pronounced in 1,114 cases in Prussia on account of confirmed drunkenness, but only in 71 cases in 1918. The experience of other countries has given rise to serious doubts as to the advisability of the introduction of legal *prohibition* in Germany.

(d) HOUSING ACCOMMODATION.

In order to provide quarters for the homeless in a manner calculated to ensure as far as possible any danger to the health of the community, large model *Shelters for the Homeless*, with baths and disinfecting and vermin-destroying appliances

established in the large towns, *e.g.*, in Berlin (2), Cologne, Düsseldorf, Elberfeld, Frankfurt-on-the Main, and Leipzig.

To solve the difficult problem of sleeping accommodation, many towns have established *homes* for *unmarried* working-men, and *girls' homes*. These are mostly controlled by religious organisations and may be found, for example, in Berlin, Düsseldorf, Munich and Stuttgart. In many cases, the large industrial firms have also set up similar establishments (working-men's barracks, etc.).

A thorough application of the principles of cleanliness and hygiene is enforced in these establishments; they are administered in accordance with special regulations. In the smaller towns shelters have been opened, *e.g.*, by the manual workers' associations, societies and religious bodies, and in the rural communes there are always at least a few rooms available for the homeless.

All these establishments are under sanitary police supervision; energetic measures are taken in the event of the outbreak of infectious diseases. The laws at present in force are the Reich Law regarding domiciliary qualifications for relief dated May 1, 1908, Article 33 of the Reich Industrial Regulations, which imposes on inns the obligation to afford shelter, the Prussian Law of 1850 on police administration, and the Police Orders in regard to sleeping accommodation. *In Prussia* the medical officer of the *Kreis* is called upon to satisfy himself as to the good sanitary condition of the shelters, sleeping-houses, common lodging-houses and workmen's dwellings, and to assist the local police authorities in the work of supervision with his expert advice. This applies in particular to outbreaks of infectious diseases. Insufficient lighting or ventilation, overcrowding, inadequate supplies of drinking-water and the improper disposal of refuse must be notified to the proper authorities. The lodgings of foreign seasonal workers must be inspected with special care; medical examination and vaccination against smallpox are obligatory in their case.

II.

C (a). *Drinking-water Supply, Drainage.*

(1) *Drinking-water supply.*

In consideration of the extreme public importance of a wholesome water-supply, the Reich and the Federal States have issued regulations to ensure wholesome water for drinking and general use.

These are based on paragraphs 17 and 35 of the Reich Law of 1900 on the prevention of diseases dangerous to the public, which have already been discussed in Section A (a). Articles 321 and 324 of the *Reich Criminal Code* and Articles 10 to 14 of the *Foodstuffs Law* of 1879 also deal with the safeguarding of water-works.

In addition, the Reich Council ("Reichsrat") has recommended that certain conditions for constructing, operating and supervising public waterworks not serving

exclusively technical purposes, drawn up by the Reich Health Council, should be as a guide in the different States.

Certain principles for the *purification of surface water by sand filtration* were drawn up in the Reich Public Health Office in the year 1899. A supplement contains the points to be observed in the *bacteriological control of filter waste-pipes*.

In Prussia, the police may be ordered to take coercive measures for the protection of the public from injurious effluents from waterworks, in accordance with Article 10, Chap. 17, Part II of General Prussian Code. The Water Law of April 7th, 1907, Articles 106-112, lays down regulations for valley barrage water and in Article 113 and following, regulations for ground-water.

The Ministerial Decree of April 30th, 1907, specifies the points for the supply of water which is hygienically unobjectionable.

Orders respecting spring-water have been issued in many administration districts. Schemes for a *central water-supply installation* must be sanctioned by the "Regierungspräsident".

Under the law of June 11th, 1874, landed property may be expropriated for the laying of water-pipes.

The communes may construct water-conduits on a commercial basis and conclude contracts with water consumers in accordance with civil law. If a commune constructs an installation of this kind in the public interest, the inhabitants may be compelled by the police to connect up with it. The use of the water-supply system and the fixation of rates are regulated by local by-laws. According to the Law of July 19th, 1907, special syndicates can be formed for laying down a common central water-supply.

It is the duty of the *Kreis* medical officer to pay attention to defective and insufficiently protected drinking-water arrangements, and to take steps to have such private and central installations substituted for them. He must supervise existing installations and test them at intervals of one to three years. All plans for new central water systems must be sanctioned by him; he can obtain assistance for this from the Prussian State Sanitary Water Institute in Berlin. He is instructed, by communes, etc., to undertake the work of sanitary adviser for waterworks.

It is impossible to give a survey of all central and private water-supply installations in Germany, as no statistics are kept.

The number (including the central installations) is enormous. For example, Saxony alone had at her disposal in 1922, over 1,617 communal or syndical water-supply systems, over 20 private water systems and more than 4,684 public wells for 4.6 million inhabitants.

(2) Drainage.

Article 35 of the *Reich Epidemics Law* is also the authority for the disposal of waste-water, and prescribes that installations for general public use are to be under the constant supervision of State officials. (See Article II. 3. A.)

As regards the *prevention of river pollution*, by a resolution of the Reich Council April 25th, 1901, the Reich Health Council was instructed to act, if requested, as intermediary and to make recommendations in cases of disagreement between States, regarding the drainage discharge into a river flowing through several States. As recommendations are not binding, it would be of advantage to have an Imperial law.

Water laws were enacted in Württemberg, 1901, Bavaria 1907, Saxony 1909, and Prussia 1913. In *Prussian Law* water-courses are divided into first, second and third class water-courses. The introduction of any solid or muddy substance is prohibited. Any person wishing to conduct water or other liquid matter in watercourses in a manner likely to prejudice others, must notify the water police authorities, who have power to refuse permission. The right to conduct liquids, etc., in watercourses can also be acquired by licence ("Verleihung"). Any person conducting matter into a watercourse without permission is held responsible for any injury caused thereby. Any privileges conferred are entered in *Water books*; there are *inspection offices* for purposes of superintendence, and a *State Water Board* has been established in Berlin.

Since the passing of the Water Law, permission from the police to lay down sewerage is no longer required. According to the *Ministerial Decree of July 13th, 1914*, water police authorities ("the Regierungspräsident" for first-class watercourses, the "Landrat" or local police authorities for second and third-class) must submit to the central authority all large sewerage schemes prior to a decision by the Regierungspräsident. Objection may be raised by the water police authorities to an application for licence. The licence can then only be granted with the consent of the Ministers of Commerce and Industry and of Public Works.

The necessary regulations for the *cleansing of public highways* are laid down in the Law of July 1st, 1912. The *Kreis* medical officer is required to inspect the disposal of solid and liquid waste (including garbage) in towns and villages, as also the condition of drain conduits, water-closets and dungheaps, and, in case of defects, to take steps for the introduction of a methodical disposal of refuse of all kinds by regular removal in carts or by sewerage. A copy of all sewerage plans submitted to the "Regierungspräsident's" district committee must be sent to the *Kreis* medical officer for examination and approval. His supervisory duties include the prevention of polluted waste water from being conveyed from industrial establishments into the streets, etc. The public clarifying works are under his control, and he must continually supervise their working. In many administrative districts there are standing orders for an examination at least once a year of the clarifying plant. In cases of difficulty, the *Kreis* medical officer must obtain assistance from the State Sanitary Water Institute.

The disposal of garbage is regulated by local police orders.

In 1911, there were in Germany 120 places with separate systems (*Trennsystem*) and 47 which used partly combined and partly separate systems; 400 localities

subjected their waste-water to special treatment; 85 employed the method of physiological purification of waste water (57 with irrigation fields, 6 with intermitten land filtration, 22 with meadow irrigation; 74 places employed artificial biological purification (32 with "Füllkörper" and 42 with "Tropfkörper"; 120 places had pneumatic mechanical discharging apparatus ("Absitzvorrichtungen"), (109 with basins, 11 with wells); 15 places treated their waste-water chemically and mechanically (2 on the Rothe-Rockner principle, 7 by carbonising methods, 6 by other methods); 39 places had only mechanical collectors (18 with grates, 8 with corf grates ("Förderrechen"), 13 with sieves); 59 places used Emscher wells ("Emscherbrunnen"), 8 Kremer wells ("Kremerbrunnen").

There has probably been a considerable increase since that date. There are, in addition, many private house sewage farms and well-built cesspools which are emptied periodically and in many cases mechanically. In comparison with earlier times, great improvement has already been made in the villages, thanks to the activity of the medical officers of health, and suitable though simple arrangements are generally found to exist there.

(b) *Public Bathing Establishments.*

No statistics are kept for this subject. In addition to the very large number of bathing establishments on rivers, there are also public baths in every town, and a considerable number of swimming-baths in the larger towns. Further, there are numerous shower-bath installations in schools, in factories and other industrial establishments, in military barracks, etc. Public bathing has made great progress, largely in consequence of the activity of the *German Public Baths Association*, which was founded in 1899. The Prussian Ministerial Decree of July 11th, 1910, lays down the guiding principles for promoting public bathing and contains a number of regulations for the erection of bathing establishments, etc. It is the duty of the *medical officer of the Kreis* to encourage the construction of public bathing establishments and to supervise those which already exist (see also Article 17 of the Reich Epidemics Law: Section II A 2). Finally, public cleanliness is promoted by the baths installed in innumerable private houses.

(c) *Control of Foodstuffs.*

The *Reich Law regarding the traffic in foodstuffs, luxury articles and articles of general utility*, May 14th, 1879, was passed with the object of protecting the public from adulterated, counterfeit and unsound foodstuffs. The magistrate bases his decision whether the foodstuffs are adulterated, counterfeit or unsound on opinion given by the representatives of trade and commerce, and is, if necessary, assisted by experts. The law provides penalties for danger caused to health by means of foodstuffs and for the sale of certain important articles of general utility (articles of clothing, toys, wallpaper, eating and drinking utensils, and petroleum). The Sanitary Police officials inspect

various States have right of access to places of sale and are empowered to take away samples of goods both from the latter and from markets. If the adulteration or soundness is not palpable to the eye, the samples are transmitted to one of the *food analysis institutes*, of which there are more than 150 in the whole of Germany, controlled by very highly qualified *chemical experts in foodstuffs*. *Reviews of the results of the analyses* are published by the Imperial Health Office on the basis of the annual reports from these Institutes. The Reich Health Office also publishes "*Agreements for Uniform Methods of Analysis*" and "*Proposed Rules in respect of Foodstuffs*". A "*German Foodstuff Book*" was issued by the Union of German Food Manufacturers and Traders.

The public is further protected by the Reich Law of July 5th, 1887, with regard to *the use of dye-stuffs which are dangerous to health* in the manufacture of foodstuffs, luxury articles and articles of general utility, and by the Reich Law of July 25th, 1887, *concerning trading in articles containing lead and zinc*.

Laws have also been enacted for the whole of Germany concerning trading in individual foodstuffs. Apart from the *Cattle for slaughtering and Inspection of Meat* of June 3rd, 1900, we have the law of June 15th, 1897 (with executive regulations of July 4th, 1897 and October 23rd, 1912) regarding *trading in butter, cheese, tallow and their substitutes*. Luxury articles such as wine and spirits for drinking purposes are subject to the provisions of the *Wine Law* of April 7th, 1909 (as amended March 28th, 1918) ; the Proclamation regarding the execution of the Wine Law of December 9th, 1920, contains directions for chemical analysis of wine. Finally, the *Wine Customs Regulations* of July 17th, 1909 should also be mentioned. The *Sweetstuff Law* of July 7th, 1902, has been replaced by the Law of April 8th, 1902, but the latter has not yet come into force. A Proclamation of the Chancellor in regard to the *description of goods*, of May 19th, 1922, provides that German served foods such as meat, fish, milk, vegetables, fruit and marmalade, artificial honey, etc., should contain on the wrapper information as to the name and address of the manufacturer, the quantity and weight of the goods, and the date of packing, etc.

The Brewery Tax Law of July 15th, 1909, was enacted by the Reich for the beer served by the North Germany Brewery Taxation Union. The South German States, Bavaria, Württemberg and Baden have issued separate, very strict regulations concerning the production of *beer*. The Brandy Tax Law of July 15th, 1909, prohibits the use of so-called *Branntweinschärpen* (alcoholic solutions of substances of pungent taste), the *Brandy Monopoly Law* of July 26th, 1918, prohibits the use of methylalcohol, and the law on *Trading in Absinthe* of April 27th, 1923, prohibits the putting into circulation of this spirit. "Technical principles" for the application of *Milk Control* and a pamphlet on milk were drawn up in the Imperial Health Office in 1822. In Prussia a Ministerial Decree was issued on July 26th, 1912, with regard to the principles which should regulate trading in *cow's milk as a foodstuff for human beings*. Police regulations have also been issued in the various States in regard to trading in foodstuffs in certain districts or localities, but a description of them exceeds the scope of this memorandum.

It is the duty of the *medical officers of Kreise in Prussia* to assist the competent authorities in controlling the traffic in foodstuffs, luxury articles and articles of general utility. In particular, he must give attention to abuses by which the nutritive value of the goods is impaired, and to the sale of any articles which may be injurious to health ; he must investigate and report any cases of injury to health which come to his knowledge. He must satisfy himself as to whether regular analyses of foodstuffs, etc., are carried out as prescribed in his district, and in particular as to whether the duty of taking samples is duly carried out.

If there is a public analysis institute in his district, he must see to its inspection upon orders from the Regierungspräsident. Special obligations are also imposed upon him as regards checking the supervision of the milk and meat trade (slaughterhouses) and in the inspection of mineral-water factories.

4. *On the Activities of the Organisations referred to above.*

Although the work of the organisations is suffering from the pressure of financial and economic difficulties, each of them endeavours to fulfil the duties which it has undertaken so far as possible. The carrying out of measures of health control is already seriously handicapped everywhere, since financial resources, without which the proper care of public health is impossible, are constantly becoming more depleted. The extremely welcome help given by neutral countries and by Germans abroad has been able but slightly to improve this lamentable state of affairs. Unless there is a complete change in the situation, the breakdown of German official health control is unavoidable. It should give pause to all who are in a position to obtain an impression in present conditions, to reflect that in the event of the breakdown of German organisations, all the neighbouring States and possibly the whole of Europe, might be involved to a most serious extent. If we only consider the campaign against epidemics, we see that the German Reich has up to now always been regarded as a protective wall, behind which its western neighbours could feel secure.

5. *On the Medical Officers, the Authorities and the general public vis-à-vis the sanitary and social legislation.*

In spite of terrible difficulties and want, the medical and sanitary police authorities in the German States are still carrying out their duties. It is, however, absolutely impossible to set up new organisations ; the difficulty of saving from ruin what exists is sufficiently great.

Sanitary legislation is also hampered by the prevailing distress, inasmuch as regulations, the execution of which necessitates considerable expenditure, cannot for that reason no longer be issued. Large sections of the population earnestly demand improvements in the sanitary organisation, and demand through their elected representatives a more thorough system of Health Control ; but with the best will in the world the Governments cannot put forward proposals for giving effect to these wishes. The anxious question which obsesses all health workers is how much longer the further deterioration of Public Health can to some extent be checked.

Berlin, May 14th, 1923.

LEAGUE OF NATIONS

HEALTH SECTION

EPIDEMIOLOGICAL INTELLIGENCE

EPIDEMIC DISEASES
IN EASTERN AND CENTRAL EUROPE

MAY - DECEMBER 1922

N° 6

GENEVA
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NOTE

The tables of cases of disease in this report combine the data in groups of five weeks for March, May, August and November, and of four weeks for the other months, for those countries which publish weekly reports, namely, England and Wales, the Netherlands, Switzerland, Germany, Austria, Italy, Danzig and Poland. The Russian data are received in this form only.

NOTES ON THE EPIDEMIOLOGY OF 1922.

In Central and Eastern Europe, the outstanding feature of the epidemiological situation in 1922 as compared with the previous year was the extremely high prevalence of typhus and relapsing fever in Russia, an increase of cholera in the Ukraine and a serious increase in the prevalence of malaria in Russia, especially of the tropical type. Russia remained the centre of devastating epidemics which were even more severe in 1922 than in 1921. In Poland the typhus situation, while far less serious than in Russia, showed no marked improvement in 1922, and the incidence of relapsing fever increased. In most of the other countries the reports showed a decrease of these diseases.

It is too early at this date (February 15th, 1923) to make any forecast for 1923. There are many known factors, and the statistical reports are so incomplete for recent months that it would not be of much value. For Eastern Europe, at any rate, it would be rash to predict a return to anything like the normal prevalence of the diseases which have appeared in epidemic form with more or less regularity for the past few years.

SUMMARY.

This report deals in some detail with the situation of the most important epidemic diseases in Eastern and Central Europe, namely : typhus and relapsing fever, asiatic cholera, dysentery, smallpox, plague, epidemic diseases of the central nervous system, malaria and enteric fever. It should be remembered that the statements here made are based on the number of cases *notified*. While actual comparisons between countries are generally impossible, the reports indicate roughly the chronological movement of the diseases within comparable areas.

Briefly summarised, the comparison between 1921 and 1922, in so far as the reports have been received, is as follows :

The incidence of *typhus* and *relapsing fever* was fully twice as great in 1922 as in 1921 in *Russia*, the extremely high epidemic wave having occurred in 1921-1922. This wave was quite double the 1920-1921 wave but was less than half as great as the second wave of 1919-1920, judging from the number of cases reported. In *Poland* no improvement in 1922 over 1921 was noted for typhus, but the prevalence of relapsing fever has greatly increased. In *Lithuania*, typhus increased and relapsing fever showed no considerable change. In *Latvia* there was apparently an increase of typhus and a decrease of relapsing fever. In other countries decreases are shown, but the total number of cases reported are relatively small.

With the exception of the Ukraine and the Russian Black Sea littoral, the *cholera* situation improved considerably in 1922. In *Russia*, exclusive of the Ukraine, the number of cases reported in 1922 was about one-fourth of those reported for 1921 since the great epidemic in South Russia, 1921 had come to an end. In the *Ukraine*, however, a serious epidemic occurred in 1922 ; the number of cases in July (the highest month) of 1922 was four times as large as in July 1921. While small outbreaks were reported in a few localities in other countries, no serious epidemics were noted.

Notifications of *dysentery* probably mean nothing more than certain intestinal infections with similar clinical symptoms, but the prevalence of the disease in 1922 was apparently considerably less than in 1921 in all the countries concerned. Even in *Russia*, for which the reports are extremely incomplete, there is no evidence of unusual prevalence.

Smallpox declined in 1922 in all countries where it was markedly prevalent during the preceding year although its incidence was still high in *Russia*.

No unusual prevalence of *plague* was noted.

The reports for the *epidemic diseases of the central nervous system* did not indicate any unusual prevalence during 1922 in the few countries in which these diseases were reported ; Germany, regard to cerebro-spinal meningitis, was, however, an exception to this rule.

Malaria assumed more alarming proportions in *Russia* during 1922, and the situation was rendered even more serious by the appearance of the tropical type in *Eastern Russia*. The millions and more cases actually reported for *Russia* represent a small proportion of the cases which must have actually occurred.

The incidence of *enteric fever* was less during 1922 than during the preceding year in nearly all European countries.

1. TYPHUS AND RELAPSING FEVER.

The information received by the People's Commissariat of Health at Moscow up to January 15th, 1923, regarding the number of typhus and relapsing fever cases in *Russia* up to and including the month of November, give a clear impression of the course of the past wave.

With the month of September the annual cycle of the two diseases is completed, and in October or November their incidence usually begins to increase. The epidemic of the winter and spring of 1922 was the fourth abnormally high wave of typhus and the third wave of relapsing fever.

The following tables indicate the course of typhus and relapsing fever in *Russia* for the past five years and in *Poland* for the past three years. The figures illustrate the consecutive epidemic waves but it must be remembered that the data for the earlier years are less complete than those for 1921 and 1922 ; various returns are missing, notably for the *Ukraine* and the *Caucasus* for 1918 and 1919 and for the eastern provinces of *Poland* up to April 1921.

Both diseases were about twice as prevalent in the winter of 1921-1922 as during the preceding year, and the incidence of both, and particularly of relapsing fever, remained high in 1922 much t

the season than usual. For instance, in the five governments of Southern Ukraine, 27,928 cases of lapsing fever were notified in June 1922 and 24,751 cases in July, as against 22,302 in February, which usually the month of maximum incidence.

CASES OF TYPHUS AND RELAPSING FEVER NOTIFIED IN RUSSIA, 1918-1922.

<i>Typhus</i>					
Months	1918	1919	1920	1921	1922
January	7,157	101,763	718,557	113,580	170,494
February	7,496	196,374	839,333	116,113	207,251
March	13,623	319,322	816,991	101,343	280,688
April	13,942	328,339	532,708	85,232	214,250
May	12,149	302,991	380,280	62,179	226,873
June	10,472	215,851	199,497	35,615	125,885
July	6,701	129,285	102,377	18,725	60,275
August	4,182	62,866	55,918	13,048	31,185
September	4,182	52,099	50,339	13,494	18,515
October	6,898	90,099	52,197	19,925	17,199
November	12,346	152,758	75,771	44,326	15,467
December	34,650	297,548	106,614	86,005	3,839*
Period not stated	—	90,396	31,619	1,574	30,762
Total	134,057	2,339,691	3,962,201	711,159	1,402,683

<i>Relapsing Fever</i>					
Months	1918	1919	1920	1921	1922
January	1,294	9,837	262,480	181,050	184,092
February	956	13,181	345,309	153,126	191,279
March	1,658	19,746	339,343	120,238	222,808
April	2,398	15,063	206,834	84,010	160,439
May	2,356	16,967	186,369	59,884	177,586
June	1,507	17,226	148,045	53,607	138,496
July	1,275	20,949	100,373	40,692	112,203
August	819	20,022	90,043	32,694	87,059
September	796	24,956	76,238	33,928	52,748
October	907	52,920	88,082	53,299	41,346
November	1,063	72,485	128,371	91,388	22,867
December	2,096	118,737	182,500	115,821	4,737*
Period not stated	—	6,200	24,124	1,000	44,113
Total	17,125	408,289	2,178,111	1,020,737	1,439,773

* Incomplete data for two weeks only.

CASES OF TYPHUS AND RELAPSING FEVER NOTIFIED IN POLAND, 1919-1922.

Months	Typhus				Relapsing fever		
	1919	1920	1921	1922	1920	1921	1922
January	14,207	34,530	5,183	6,462	1,773	968	6,19
February	17,061	25,858	6,090	7,041	311	790	9,8
March	23,272	27,843	6,461	8,587	381	917	8,
April	28,190	24,616	8,624	5,332	286	2,233	3,0
May	33,929	24,339	5,341	5,819	746	846	3,6
June	20,445	12,329	2,712	2,849	276	780	2,1
July	22,287	5,366	2,364	1,220	305	808	1,1
August	14,735	1,388	927	754	107	482	1,4
September	11,986	1,650	860	461	455	680	1,4
October	12,980	2,195	927	515	620	510	5,
November	12,382	3,013	1,746	900	871	1,558	8
December	18,333	4,576	3,600	852	948	3,577	5
Total	229,807	167,703	44,835	40,792	7,079	14,149	40,5

The value of the Russian data has been discussed at length by Prof. Tarassevitch in *Epidemiological Intelligence* Nos. 2 and 5. Russian experts admit that the actual number of cases is considerably higher than the returns indicate, and notably so in the more remote parts of the Federation. Several months generally elapse before the figures become definitely established, because returns from rural districts arrive late. Siberian data are thus, at the time of writing, only available for the first months of the year, and no returns have been received, as yet, for August or later months from the governments of Olonetz, Rybinsk, Terek and the republics of Daghestan and Azerbeidjan.

Although frequently incomplete, the data are of decided value, at least for typhus, relapsing fever and cholera, and the effect of various errors can be reduced by proper statistical analysis. In *Epidemiological Intelligence* No. 1 the Red Army statistics were indicated as a useful index for the epidemic situation in Russia, but the publication of sanitary statistics for the army was, unfortunately, discontinued some months ago. Significant and fairly exact results can be obtained, however, by comparing the incidence of typhus with that of relapsing fever. This analysis does not show the actual number of cases, but it does throw light on the relative movement of the two diseases. The ratio thus established is less influenced by incomplete notification, missing returns for rural districts, than are the actual figures, because the sources of error affect the figures for both diseases, if not to the same extent, at least in the same direction.

Typhus and relapsing fever both reach their maximum incidence normally in the winter months, but the curve of seasonal incidence described by typhus is, as a rule, steeper than that of relapsing fever, the latter continuing later in the summer. The ratio of typhus cases to relapsing fever was for the whole of Russia 0.42 in September 1921 and rose gradually during seven months to a maximum of 1.34 in April, falling again regularly for the next five months to 0.35 in September 1922 (see Annex 2). It is noteworthy that the abnormally high incidence of these diseases in June 1922 (evidently due to the famine conditions) did not influence the normal ratio of the two diseases. Typhus is relatively highest in the north and relapsing fever in the south. In Poland the ratio of typhus to relapsing fever is everywhere highest in April and May (see diagram N).

The figures in Annex 1 show that typhus reached its greatest intensity in three areas: (1) in the north stretching in a curve running north-west from the Northern Ural Mountains to Marxstadt on the Volga; (2) in the Central and Southern Ukraine; (3) in the region round Moscow.

The prevalence of relapsing fever was greatest in the Ukraine and in the Ural Mountains, where from 20 to 35 cases of this disease per 1,000 inhabitants were recorded in most governments. The diseases have clearly been most prevalent in and near the famine area.

A direct comparison between the years 1921 and 1922 is still more difficult to obtain because in some places the quality of the notification has varied from year to year. It seems certain, however, that both typhus and relapsing fever have decreased considerably in Western Russia with the possible exception of Petrograd. Practically all the remainder of Russia shows a marked increase. Typhus more than tripled both in the Ural region and in the Ukraine, where a marked increase has occurred. Typhus was more than four times higher in Moscow than in 1921. Relapsing fever has increased particularly in the Central Ukraine, and in Eastern and Central Russia; in Moscow it has tripled. Relapsing fever is reported to have been more fatal than during the former epidemics, and various serious complications, notably of intestinal form, have frequently been mentioned (see also *Epidemiological Intelligence* No. 5, pages 26-27).

Returning to the relative incidence of typhus and relapsing fever in 1921 as well as in 1922, relapsing fever was far more prevalent than typhus in the south, while typhus was commoner in the north. There is frequent confusion in the diagnosis of the two diseases, but this can hardly account for the fact that south of latitude 50° N., roughly speaking, twice as many cases of relapsing fever as of typhus were notified, while north of latitude 56° N. the proportion is inversed. The concentration of relapsing fever in the southern belt was most pronounced in the central part of the Kirghiz Republic, where its ratio to typhus exceeded 3 to 1; further to the east, in Semipalatinsk, Siberia and Turkestan it increased again. From Bukeev west to Ekaterinoslav the ratio exceeded 2 to 1, and in the whole of the Ukraine, with the exception of Odessa, and in the central Black Soil district, relapsing fever exceeded typhus. From the six eastern provinces of Poland, more relapsing fever cases than typhus cases were returned, while in the remainder of Poland and in the other border States, relapsing fever was rare. When comparing the ratios for the two years in question, it is seen that the geographical distribution of the two diseases tends to become more identical; relapsing fever has increased more rapidly in the north than typhus, while the reverse is the case in the south. It is evident that both diseases have gained new territory in 1922, typhus spreading southwards and relapsing fever northwards. The prevalence of typhus and relapsing fever in the countries west of Russia is indicated in the following table, where the present year's incidence is compared with that of 1921.

CASES OF TYPHUS AND RELAPSING FEVER NOTIFIED IN 1921 AND 1922.

Country	Months	Typhus		Relapsing fever	
		1921	1922	1921	1922
Finland	I-XII	32	1	2	1
Estonia	I-XII	345	163	19	91
Latvia	I-XII	1,288	1,480	275	116
Lithuania	I-XII	3,004	3,409	1,301	910
Poland	I-XII	44,835 *	40,792	14,149 *	40,045
Germany	I-XII	640	386	53	31
Czechoslovakia	I-XII	948	417	13	35
Austria	I-XII	63	23	—	—
Kingdom of the Serbs, Croats and Slovenes . . .	I-XI	1,054	92	—	1
Constantinople	I-XII	204	195	155	1

Data for the three Eastern provinces of Poland are missing for January-March 1921.

The incidence of typhus did not increase greatly in Central Europe in comparison with the previous year. Relapsing fever, on the other hand, has increased in certain localities and notably so in Eastern Poland. The sudden increase of the latter disease in Poland is closely connected with the refugees and others returning from Russia, as shown in Diagram 2. From January to June 1922, 170,194 persons were repatriated from Russia, passing the Polish quarantine stations, chiefly Baranovicze, and a high morbidity constantly prevailed. The most prevalent diseases were relapsing fever, of which 3,811 cases were recorded, and typhus, of which 1,780 cases were treated in the hospitals at the quarantine stations, giving for those two diseases alone a rate of incidence of 33.8 per 1,000 repatriated. The case fatality among them was high: 11.4 % for relapsing fever and 13.8 % for typhus. The close coincidence of typhus, and particularly of relapsing fever, with the number of repatriated settled in eastern provinces, suggests the eastern origin of the epidemic. Relapsing fever was confined practically to the eastern provinces, the incidence reaching nowhere else as much as one case per 10,000 inhabitants.

An interesting suggestion is afforded by Diagram 2: namely, that the indicated case fatality continued to rise regularly during the months preceding the crest of the epidemic and then returned gradually to its former level. The movement was particularly marked in the case of relapsing fever, where the fatality increased from 1.7 registered deaths per 100 notified cases in September 1921 to 5.2 in December and January; but in July 1922 a new minimum of 2.2 had been reached.

A definite forecast can hardly be given for the present winter since data for December are not available in complete form, but certain indications may be furnished by the following table, in which are included only those governments from which data have been received for each of the months of September, October and November, for 1921 as well as for 1922.

INCIDENCE OF TYPHUS AND RELAPSING FEVER IN THIRTY-SIX GOVERNMENTS OF EUROPEAN RUSSIA
SEPTEMBER-NOVEMBER 1921 AND 1922.

Region	No. of governm.		Typhus			Relapsing fever	
	Available.	Incomplete.	Sept.	Oct.	Nov.	Sept.	Oct.
Western	4	3	162 <i>297</i>	211 <i>398</i>	234 <i>641</i>	200 <i>440</i>	290 <i>767</i>
Northern	8	1	985 <i>263</i>	832 <i>394</i>	1,245 <i>1,020</i>	710 <i>156</i>	487 <i>195</i>
Central	9	2	1,416 <i>1,221</i>	1,458 <i>1,703</i>	1,864 <i>2,342</i>	2,878 <i>1,508</i>	2,458 <i>2,176</i>
South-Central	5	0	1,618 <i>1,527</i>	1,474 <i>1,636</i>	1,231 <i>1,397</i>	3,921 <i>4,803</i>	4,448 <i>4,753</i>
Middle Volga	4	5	1,056 <i>658</i>	961 <i>777</i>	1,355 <i>1,281</i>	2,272 <i>843</i>	1,964 <i>1,498</i>
Eastern	3	5	2,673 <i>487</i>	3,873 <i>1,374</i>	4,484 <i>3,168</i>	4,635 <i>970</i>	6,596 <i>2,214</i>
Southern	3	8	165 <i>116</i>	222 <i>139</i>	294 <i>276</i>	1,169 <i>723</i>	963 <i>858</i>
Total	36	—	8,075 <i>4,569</i>	9,031 <i>6,421</i>	10,707 <i>10,125</i>	15,785 <i>9,443</i>	17,206 <i>12,461</i>

Note: The data are on a basis of months of equal length. The figures in *italics* refer to 1921, those in ordinary type to 1922.

The table refers to 36 governments and autonomous territories of European Russia distributed throughout the various geographical regions with exception of the Ukraine; 24 governments and autonomous territories, besides the Ukraine, are excluded, the character of the data not warranting

clusion. It appears that the higher level of typhus and relapsing fever which existed throughout the summer continued into September and October, but the increase of both diseases was slower in 1922 than in the previous year, so that the November figures are about equal for the two years.

The incidence of typhus in 1922, taking the corresponding figure for 1921 as a unit, was 1.77 in September, 1.41 in October and 1.06 in November; the corresponding ratios for relapsing fever were 1.67 in September, 1.38 in October and 0.98 in November. It is possible, however, that additional returns for November may be received from some governments. It appears that typhus has increased more rapidly than relapsing fever, but the same was observed in 1921 and seems a normal condition. A higher incidence of typhus in November 1922 than during the previous year is indicated in the eastern and northern regions, while its incidence is distinctly lower in the western region. Relapsing fever appears to be far more prevalent in the east than it was in 1921, while the returns for the other regions are, up to the present, lower than during November 1921.

While the data so far received are not alarming, they cannot be considered to constitute any definite indication as to the probable incidence of the two diseases during the whole of the current winter. The high prevalence during the past summer appears to have delayed the normal winter decrease, which, nevertheless, may become serious at a later date.

2. ASIATIC CHOLERA.

The South-Russian cholera epidemic has come to an end, and it is now possible to describe its extent and character. Serious anxiety was caused by the rapid spread of cholera cases throughout nearly the whole of Russia during the winter and early spring of 1922 as well as by the high fatality rate. The rapid rate of increase which characterised the epidemic of 1921 did not occur, however, and the explosive outbreaks which are common with cholera during the summer months were largely confined to certain cities in the Black Sea region. In August the decline of the epidemic became evident, and in September only a few hundred cases were notified. In November only one case of cholera was reported in the Ukraine, and in December there were three cases.

The following table compares the progress of the cholera epidemics during 1921 and 1922 and, taking the corresponding figure for the previous year as a unit, shows the ratio for each month of 1922.

CASES OF CHOLERA NOTIFIED IN RUSSIA, 1920, 1921 AND 1922.

Months	Russia (without the Ukraine)				The Ukraine			
	1920	1921	1922	Ratio of 1922 to 1921	1920	1921	1922	Ratio of 1922 to 1921
January . .	697	133	244	1.8	36	2	328	164.0
February . .	716	97	230	2.4	115	2	232	116.0
March . .	492	219	1,179	5.4	789	3	807	269.0
April . . .	876	838	1,112	2.3	316	62	1,323	21.3
May	603	3,354	3,648	1.1	83	212	5,610	26.3
June	592	30,948	7,819	0.3	378	2,048	7,818	3.8
July	2,754	85,171	11,746	0.1	2,405	5,341	22,052	4.1
August . . .	9,268	49,606	6,240	0.1	4,939	4,543	4,078	0.9
September .	4,238	12,703	593	0.0	1,810	1,664	119	0.1
October . .	522	5,053	108	0.0	263	150	—	—
November . .	110	357	—	—	93	145	1	—
December . .	147	216	—	—	1	292	3	—
Unstated . .	168	1,896	10,330	—	—	—	1,144	—
TOTAL . . .	21,183	190,591	44,049	0.2	11,228	14,464	43,515	3.0

The notification of cholera cases is far more complete in Russia than the notification of any other disease, but, unfortunately, a record of deaths from cholera which would have allowed a study of the case fatality is not available.

In the places where cholera was prevalent early in the year no sudden outbreak seems to have occurred during the summer, while in Odessa and in Astrakhan, where the situation became more serious, no case was observed until April. In the table below a few examples are given of the variations of the seasonal incidence observed in a number of governments.

CHOLERA CASES NOTIFIED IN CERTAIN GOVERNMENTS OF RUSSIA AND THE UKRAINE, 1921-22

Month	Kiev	Poltava	Kharkov	Odessa	Astrakhan	Ku
October	2	2	28	50	0	
November	1	53	80	0	0	
December	184	103	5	0	0	
January	272	10	34	0	0	
February	0	52	39	0	0	
March	78	337	181	0	0	
April	66	527	275	52	11	
May	87	354	218	2,664	81	
June	168	211	417	3,465	1,018	1,3
July	480	531	1,381	7,680	221	1,3
August	163	112	241	1,534	16	1,3
September	12	10	8	16	0	3
TOTAL	1,513	2,302	2,907	15,461	1,347	5
Cases per 1,000 population	0.4	1.0	1.2	8.1	3.5	

Similar observations have been made in the previous years' cholera epidemics, and notably in 1920, for which the monthly totals are given in the table on page 11. Cholera was relatively prevalent that year during the winter season and early spring but declined in May; the following summer, outbreaks were not very large. The serious cholera epidemic in Odessa of midsummer 1922 forms an interesting contrast to the seasonal fluctuations of the disease in the same locality in 1920; a considerable outbreak occurred in March 1920 but had almost disappeared by June and July; a new increase was noted in August, which, however, did not even reach the level attained in March. The number of cholera cases observed during each month of 1920 in the government of Odessa were as follows:

January	21	May	24	September	152
February	74	June	7	October	65
March	653	July	10	November	18
April	84	August	281	December	0

The total incidence of cholera in the government of Odessa was only 0.7 per 1,000 population in 1920, as against 8.1 in 1922.

Much reliance has been placed by the Russian Health Administration in anti-cholera vaccination and the experiment is interesting because of the vast scale on which it has been carried out. Cholera vaccination is stated to have been successfully employed in 1921 in the army, but it among civilians was negligible that year. During the current year not only has the entire army and railway personnel been vaccinated and revaccinated, but over 12 million vaccinations were performed of which, according to official statistics, 7 millions by the Russian Health Authorities, largely in

kraine, and the remainder by the American Relief Administration, which operated particularly in the Volga and Ural region. Details of the vaccinations performed in each government are given in the table, Annex 3. The months in which the vaccinations under the control of the Health Administration were performed are stated to be as follows:

Month	1st injection	2nd injection	3rd injection	Total
January	341	526	0	867
February	4,387	4,274	0	8,661
March	7,177	388	369	11,934
April	39,310	20,715	6,737	66,762
May	138,503	87,500	33,226	259,229
June	396,791	219,588	76,089	692,468
July	896,509	679,123	316,779	1,892,411
August	598,276	441,890	283,674	1,323,840
Not stated	1,279,641	937,424	494,029	2,785,525*
Total	3,360,935	2,395,428	1,210,903	7,041,697*

The only new outbreak of cholera noted in September took place in Arkhangel, where 81 cases were notified; no case has occurred at Murmansk, so far as our records show, and as navigation to Arkhangel is now closed by ice, this outbreak is of no immediate importance to Western Europe.

The few cases of cholera recorded in Poland and in Roumania in July and August (see *Epidemiological Intelligence* No. 4) have not been followed by any further outbreaks, and real epidemics are now out of the question until next summer.

3. DYSENTERY.

Dysentery was far less prevalent in 1922 than during the previous year; the decrease is very marked everywhere in Europe, and particularly so in Poland and in Germany, where a serious outbreak in the Westphalian region occurred the previous year. Only very incomplete data have been received so far from Russia, but no information has arrived which would indicate any unusual prevalence of dysentery. Data for the Ukraine up to the end of September show a lower incidence than during 1921.

The incidence of dysentery in various countries, where it is now more or less endemic, is given below for 1922 and compared with the corresponding period of last year.

CASES OF DYSENTERY NOTIFIED IN CERTAIN COUNTRIES, 1921 AND 1922.

Country	Period	1921	1922
Germany	January-December	31,624	5,036
Czechoslovakia	January-December	8,525	1,315
Austria	January-November	4,593	1,136
Finland	January-December	391	209
Estonia	January-December	1,199	329
Latvia	January-December	1,162	913
Lithuania	January-December	1,155	356
Poland	January-December	30,998	14,335
Ukraine	January-October	46,263	36,591

* Including 74,431 vaccinations, the order of which was not stated.

Further details regarding the prevalence of dysentery during the current year are given in Table No. 4 (page 32). The notifications are generally incomplete and no distinction is made between the various types or causative agents, and the data relate merely to a group of intestinal infections with similar clinical symptoms.

4. SMALLPOX.

Smallpox has not been very prevalent anywhere in Europe during the current year. In Russia its incidence appears to be only half of what it was last year; 45,436 cases were notified during the first ten months of 1922, as against 98,578 during the whole of 1921 and 158,505 in 1920. The decrease is marked in practically every government of Russia; in the Ukraine 9,009 cases were registered for the first ten months of the current year, as against 29,041 in 1921. The local health authorities ascribe this decrease to a vaccination campaign which has been conducted throughout the country.

In Poland the incidence of smallpox declined from a maximum of 446 cases in April to 31 cases in December. In Germany and elsewhere in Central Europe, smallpox has been almost non-existent during recent months. In Switzerland, on the other hand, 1,153 cases were notified during the whole year, and in England there were 1,003 cases in 1922; the cases were, however, mostly very mild.

5. PLAGUE.

Plague has occurred in Russia only at Selo Fedosevka, on the Kalmuk Steppes, where 27 cases, of which 18 were fatal, were verified by a special enquiry in June, July and August, and in the Kirghis Steppes, where 23 cases suspected to be plague were reported in January. No further reports indicating the presence of plague in Russia have been received.

6. EPIDEMIC DISEASES OF THE CENTRAL NERVOUS SYSTEM.

Encephalitis lethargica, acute poliomyelitis and meningococcal meningitis have not shown any considerable prevalence in 1922. Encephalitis lethargica, which in the previous years has attracted much attention, has been far less prevalent than during the two preceding winters. Complete notification of this disease is of recent date and not, as yet, generally adopted; reliable data are restricted, therefore, to half a score of countries, largely in the northern part of Europe. Fewer cases are known to have occurred in the Mediterranean countries than in Northern Europe; but cases have been observed as far south as Algeria, where twenty cases appear in the epidemic records for the last two years. An outbreak of a mild character occurred in the first months of the year in Northern Italy.

Such details as have been received regarding the prevalence of encephalitis lethargica are given in Table No. 12 (page 41) and its incidence is given below for a few countries where it was most prevalent and where data are available for three years.

CASES OF ENCEPHALITIS LETHARGICA NOTIFIED IN CERTAIN EUROPEAN COUNTRIES. 1920-1922.

Country	1920	1921	1922
Finland	239	998	46
Sweden	136	1,504	161
Norway (cities) . . .	9	55	7
Denmark	194	135	36
England and Wales . .	890	1,470	463
Belgium	17	243	21
Switzerland	984	154	62

Encephalitis lethargica reminds one, in respect of its present geographical distribution, of the considerable outbreaks of acute poliomyelitis, which caused such severe epidemics in the Scandinavian countries in 1905 and 1911-12. In Southern Europe, up to the present, acute poliomyelitis occurred only sporadically, in spite of the fact that, in Northern Europe and in America, the most favourable season for its development falls in the warmest months.

Cases of epidemic cerebro-spinal meningitis have been notified in nearly all countries of Europe, they have been nowhere widespread. An increased incidence was noted in Germany, where 1,622 cases were reported in 1922, as against 696 cases in 1921. A certain increase is indicated also in Czechoslovakia, from 78 cases in 1921 to 215 cases in 1922.

7. MALARIA.

Malaria has now been considerably reduced in Central and Southern Europe, where new endemic foci had developed during the war. In Poland, for example, about 17,000 cases of malaria were notified in 1922, as against 53,000 in 1921.

Malaria has always been prevalent in the river valleys of Southern and Eastern Russia, but little information is available as to the actual incidence. In recent years new regions have become infected, grave concern has been caused by the appearance of large numbers of severe cases of the tropical type in European Russia, where such forms were formerly rare. A Central Malaria Commission, as well as local commissions in the most affected areas, have been formed, therefore, with the object of gathering information on malaria and of studying possible means of controlling it. More than 1,000,000 cases of malaria were officially notified in 1922, but it appears from local sources that this represents only a small fraction of the actual incidence.

Turkestan is believed to have been the principal centre from which the epidemic has spread in its severe form. During recent years the artificial irrigation system of Turkestan has fallen into disrepair and about one-fourth of the whole area is said to have become mosquito-infected swamps; many villages are entirely abandoned because of the malaria. In 1921, 210,000 cases were officially notified, 105,000 during the first ten months of 1922. The fact that 45,000 cases were returned by the Turkestan railway authorities in 1921 shows that the railway is an important factor in the spread of malaria from Turkestan to Russia.

Caucasia appears to be the hardest hit by malaria. In Georgia 300,000 cases were notified in 1921 the epidemic is said to be still increasing; 177,000 cases were reported in Daghestan during the eleven months of 1922; Azerbeidjan and the Mountain Republics are also seriously infected. In

the Government of Stavropol 110,000 cases were notified; in Terek the proportion of the population infected is reported to vary from 30 to 80% and the case fatality to average from 15 to 20%.

Very large numbers of malaria cases are also reported from the governments on the Middle and Lower Volga and the Don; very incomplete official statistics place the number of cases notified in this region at over 200,000. Blood examinations made in the government of Saratov indicated 26% of tropical forms in 1921 but 86% in 1922. The mass movement of refugees during the famine period has caused an unusual spread of malaria in and beyond this area. The considerable increase of malaria in Central Russia is also attributed to the refugee movements; in the government of Moscow 28,000 cases were notified during the first eleven months of 1922. Even the distant northern governments of Severodvinsk and Arkhangel recorded 10,000 and 6,000 cases of malaria, respectively, during the same period. 15,000 cases of malaria were notified on the waterways from January to July, and 77,000 cases on the railways from January to September. The months of maximum incidence were April, August and September; the autumn epidemic appears to have been more severe than the spring outbreak.

8. OTHER EPIDEMIC DISEASES.

The incidence of enteric fever, scarlet fever and diphtheria in various countries for 1922 compared with the corresponding figures for 1921 in the table below; further details regarding these diseases are given in Tables Nos. 6, 8 and 9 (pages 34, 38 and 39 respectively).

CASES OF ENTERIC FEVER, SCARLET FEVER AND DIPHTHERIA NOTIFIED IN VARIOUS EUROPEAN COUNTRIES IN 1921 AND 1922.

Country	<i>Enteric fever</i>		<i>Scarlet fever</i>		<i>Diphtheria</i>	
	1921	1922	1921	1922	1921	1922
England and Wales	2,925	2,460	101,368	107,924	51,397	52,000
Netherlands	1,730	1,010	2,419	3,276	6,290	4,000
Switzerland	383	340	2,647	2,270	6,222	4,000
Germany	18,808	10,993	48,281	32,443	63,018	37,000
Czechoslovakia	9,207	6,705	9,563	10,785	4,328	3,000
Austria	4,097	2,172	3,868	2,323	3,634	2,000
Italy	29,602	22,973	8,744	10,532	10,416	16,000
Denmark	334	456	5,813	4,649	7,235	7,000
Norway (cities)	568	191	434	812	1,794	7,000
Sweden	813	911	6,939	10,710	12,286	5,000
Finland	1,311	1,298	1,320	990	3,750	9,000
Esthonia	1,256	854	1,393	594	771	5,000
Latvia	1,431	1,011	1,532	1,598	964	6,000
Lithuania	1,277	1,140	752	437	284	3,000
Poland	25,296	19,509	23,865	13,225	3,436	1,000
Ukraine	95,099	82,533	28,523	13,933	14,436	1,000
Russia	316,622	192,480	77,534	35,697	25,216	1,000

The above diseases have been grouped together merely for the sake of convenience and the figures not comparable for the several countries because of the differing standard of notification. It is of interest, however, to compare 1922 with the previous year for each country separately and particularly so in the case of enteric fever, the incidence of which shows in many cases some sanitary improvement. It is seen from the above table that enteric fever has decreased from 1921 to 1922 in all these countries, and particularly so in Central Europe.

The figures of paratyphoid fevers are, unfortunately, only separated from those of typhoid fever in a few countries, and details regarding the type are only given in exceptional cases. The highest number of paratyphoid notifications were returned from Denmark, where there were 229 cases from January to November, as against 227 cases of typhoid fever; and from Switzerland, where there were 261 cases of paratyphoid fevers as against 261 cases of typhoid fever; in Esthonia 110 cases of paratyphoid fevers and 744 cases of typhoid fever; in Belgium 51 cases of paratyphoid fevers; in Czechoslovakia 45 cases; and in Latvia 27 cases. The cases in Czechoslovakia were given as 35 of type B, 10 of type A and 3 not specified. It may safely be assumed that these figures represent only a fraction of the incidence of paratyphoid infections.

This comparison is of less interest in the case of scarlet fever and diphtheria because these diseases occur in more or less well-defined waves of several years' length; their prevalence, however, has not increased in Europe generally during the current year. In several countries they have both decreased, but there is no reason to assume that this will be permanent. Both diseases had their maximum incidence during the first three months of the year and declined until June or July, when a slow increase again began. This is in accordance with their normal incidence, although their seasonal concentration is less marked than is the case, for instance, with typhus, relapsing fever, cholera or dysentery.

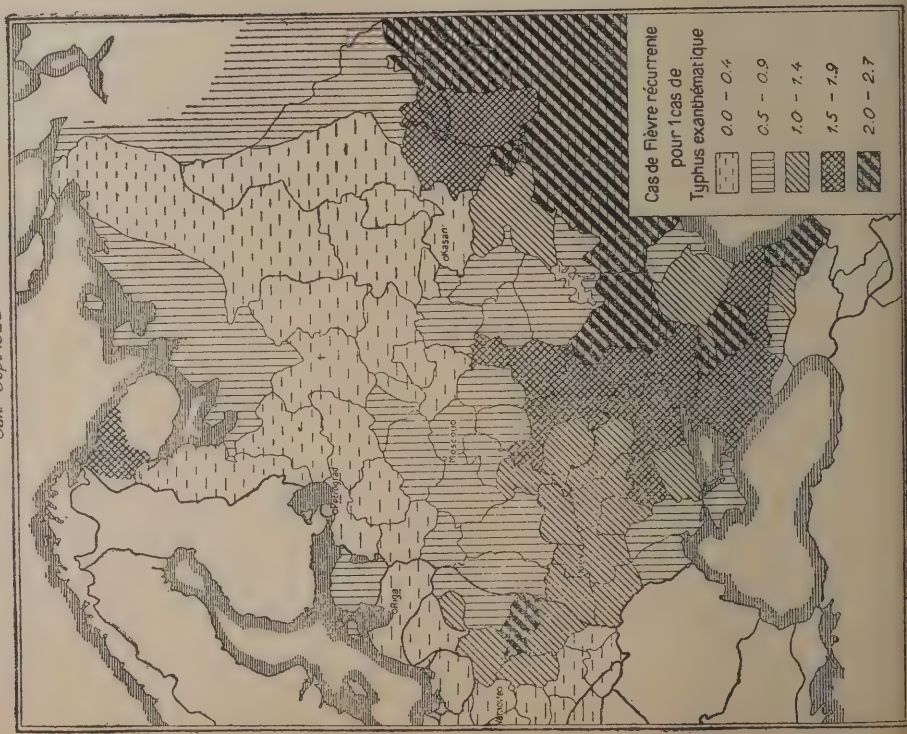
It is interesting to note the cases of anthrax reported from various countries of Central and Eastern Europe. In Germany 125 cases of human anthrax were notified in 1922, as against 80 cases in 1921; in Czechoslovakia 69 cases, in Poland 47 cases, and in Latvia 6 cases were officially notified in 1922. In the Ukraine 306 cases of human anthrax were notified from January to May.

The figures given in previous numbers of *Epidemiological Intelligence* for typhus, relapsing fever, dysentery, smallpox and typhoid fever in Central and Eastern Europe are brought up to date in the following tables. A new table giving the number of malaria cases notified in Russia and Poland has been added. In addition to these regular tables, data for certain diseases of general European interest have been inserted. Acute poliomyelitis, encephalitis lethargica and influenza are given only for those few countries in which notification is compulsory.

DIAGRAM No. 1.

Comparative Incidence of Typhus and Relapsing Fever in Russia.

I Distribution géographique
Jan. - Sept 1922



II Rapport des nombres de cas par mois en Russie
de Sept 1921 à Sept 1922.

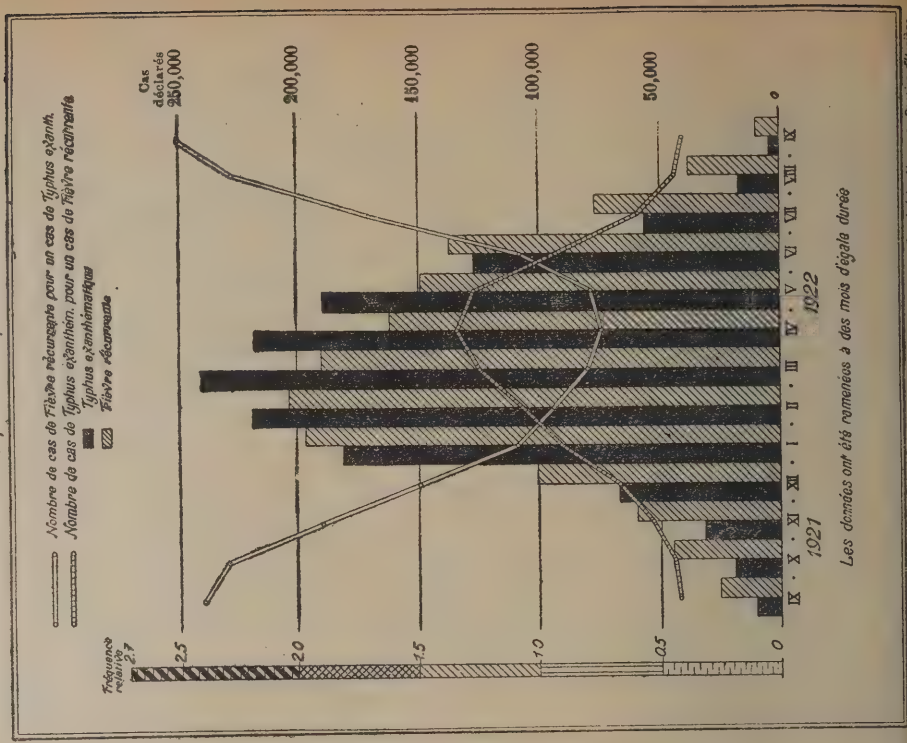
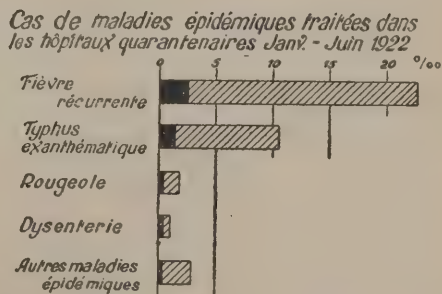
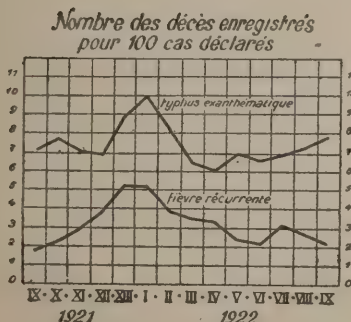
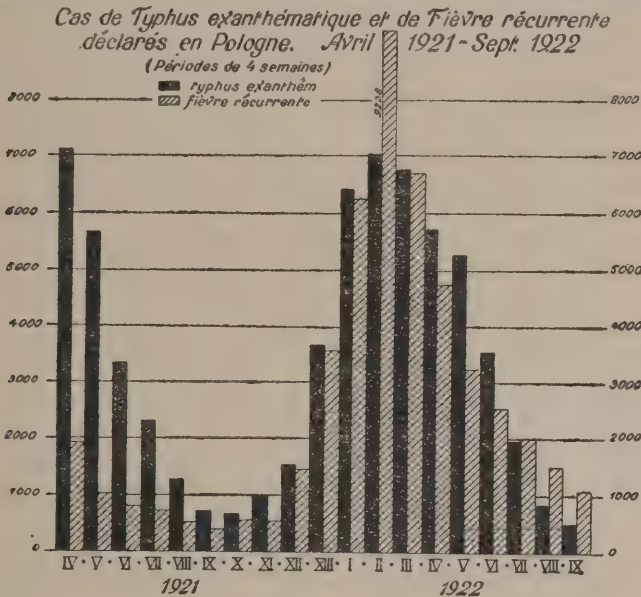
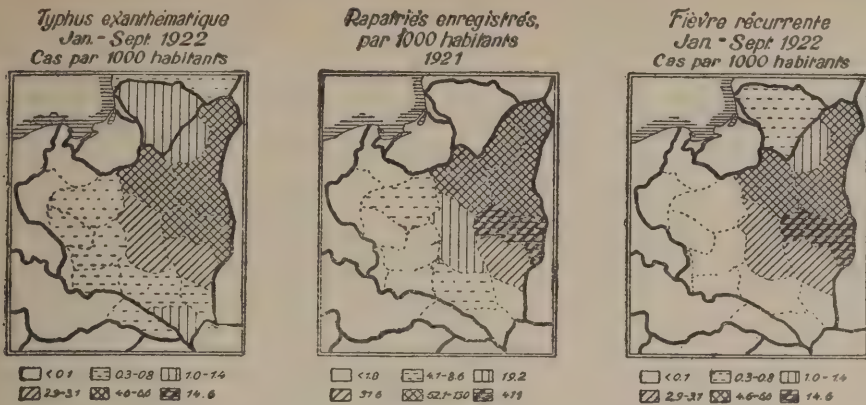


DIAGRAM No. 2.

Incidence of Typhus and Relapsing Fever in Poland, 1921-1922.



Note: La section noire représente la nombre de décès

ANNEX 1.

Incidence and Mutual Relation of Typhus and Relapsing Fever in Russia, 1921-

Governments	Incidence per 1,000 population				Ratio of 1922		Cases of Relapsing Fever		Ratio of relapsing fever to Typhus
	Typhus		Relapsing Fever		Incidence to 1921		for each case of Typhus		
	1921	1922	1921	1922	Typhus	Relaps. Fever	1921	1922	
Western Region:									
Petrograd City	5.1	10.2	7.9	6.0	2.00	0.76	1.5	0.6	0.3
Petrograd Gov.	1.8	3.7	1.1	1.4	2.10	1.24	0.6	0.4	0.7
Novgorod	2.4	3.4	1.7	1.2	1.42	0.70	0.7	0.3	0.2
Pskov	5.4	2.6	1.6	0.9	0.48	0.60	0.3	0.4	1.4
Vitebsk	10.0	4.9	7.5	3.8	0.49	0.51	0.8	0.8	1.1
White Russian Rep.	20.5	7.4	20.4	7.5	0.36	0.37	1.0	1.0	1.1
Gomel	9.1	6.3	8.3	4.4	0.69	0.53	0.9	0.7	0.7
Northern Region:									
Murmansk	—	24.8	—	33.5	—	—	—	1.3	—
Karelian Comm.	4.1	10.9	0.9	4.6	2.69	5.40	0.2	0.4	2.6
Arkhangel	6.5	4.1	6.9	2.9	0.84	0.67	1.1	0.7	0.7
Olonetz	2.8	3.1	1.2	0.5	1.07	0.44	0.4	0.2	0.1
Cherepovetz	3.8	3.6	1.8	1.2	0.94	0.71	0.5	0.4	0.8
Vologda	4.0	9.6	1.0	4.5	2.43	4.54	0.2	0.5	1.7
Severodvinsk	4.9	7.6	0.8	2.2	1.69	2.97	0.2	0.3	1.4
Zirian Region	—	2.1	—	0.8	—	—	—	0.4	—
Kostroma	2.9	7.1	0.7	2.4	2.44	3.27	0.3	0.3	1.4
Central Region:									
Rybinsk	2.4	10.4	1.5	5.5	4.25	3.74	0.6	0.5	0.6
Yaroslavl	7.0	16.3	1.9	6.1	2.33	3.16	0.3	0.4	1.4
Ivanovo-Vosniessensk	2.4	7.5	1.7	3.7	3.10	2.19	0.7	0.5	0.7
Vladimir	4.5	12.1	1.4	4.9	2.69	3.47	0.3	0.4	0.7
Tver	5.7	5.3	2.1	2.4	0.93	1.16	0.4	0.5	1.1
Smolensk	9.3	8.0	5.8	5.0	0.87	0.87	0.6	0.6	0.6
Moscow City	4.2	17.9	5.1	17.2	4.29	3.35	1.2	1.0	0.6
Moscow Gov.	4.0	13.7	3.3	9.4	3.41	2.85	0.8	0.7	0.6
Kaluga	7.0	14.1	5.5	8.7	2.00	1.57	0.8	0.6	0.6
Tula	6.5	8.1	5.3	5.5	1.23	1.05	0.8	0.7	0.6
Riazan	6.6	6.6	4.5	4.0	1.00	0.89	0.7	0.6	0.6
South-Central Region:									
Briansk	4.6	8.9	9.5	12.4	1.92	1.31	2.0	1.4	0.6
Orel	6.0	7.4	8.0	11.9	1.22	1.49	1.3	1.6	0.7
Tambov	7.0	5.2	11.8	8.6	0.75	0.73	1.7	1.6	0.7
Voronezh	3.2	3.7	6.5	6.7	1.16	1.02	2.0	1.8	0.8
Kursk	7.8	8.4	7.8	9.1	1.08	1.17	1.0	1.1	0.9
The Ukraine:									
Volhynia	1.8	3.1	3.4	4.5	1.75	1.33	1.9	1.5	0.7
Podolia	1.7	4.4	5.0	7.5	2.56	1.52	2.9	1.7	0.7
Kiev	1.4	5.2	2.7	7.8	3.80	2.85	2.0	1.5	0.7
Chernigov	5.9	13.3	3.4	14.4	2.26	4.30	0.6	1.1	0.7
Kremenchug	7.4	13.2	14.4	19.8	1.78	1.38	1.9	1.5	0.7
Poltava	5.9	22.9	5.5	24.1	3.91	4.39	0.9	1.1	0.7
Kharkov	7.9	9.8	10.7	13.4	1.24	1.26	1.3	1.4	0.9
Odessa	7.9	34.0	19.7	22.6	4.30	1.14	2.5	0.7	0.7
Nicolaiev	13.0	15.4	19.9	15.4	1.83	0.77	1.5	1.0	0.7
Ekaterinoslavl	2.0	13.8	9.2	28.4	6.98	3.10	4.6	2.1	0.7
Zaporozhe	3.9	15.5	12.0	23.0	3.97	1.91	3.1	1.5	0.7
Donetz	3.0	9.2	15.2	16.7	2.73	1.10	5.1	2.0	0.7
Crimea									
Crimea	7.0	20.1	8.9	10.2	2.87	1.15	1.3	0.5	0.7
Middle Volga Region:									
Nijni-Novgorod	6.4	8.8	2.6	4.5	1.38	1.70	0.4	0.5	0.7
Mariskaia Reg.	—	22.3	—	8.8	—	—	—	0.4	0.7
Chuvach Reg.	3.1	9.8	3.0	6.9	3.19	2.29	1.0	0.7	0.7
Tartar Rep.	9.6	13.7	4.3	7.2	1.42	1.67	0.4	0.5	0.7
Simbirsk	6.6	24.0	4.4	14.0	3.64	3.16	0.7	0.6	0.7
Penza	7.3	15.2	6.3	14.3	2.07	2.26	0.9	0.9	0.7
Saratov	6.7	13.1	5.4	8.4	1.95	1.56	0.8	0.6	0.7
Samara	2.7	9.0	3.4	11.5	3.27	3.35	1.3	1.3	0.7
German Comm.	14.3	29.9	4.2	12.3	2.09	2.92	0.3	0.4	0.7

Cas de Paludisme constatés en Russie, 1922.

Cases of Malaria notified in Russia, 1922.



ANNEX 1 (continued).

dence and Mutual Relation of Typhus and Relapsing Fever in Russia, 1921-22.

Governments	Incidence per 1,000 population		Ratio of 1922		Cases of Relapsing Fever		Ratio of Rel-	
	Typhus	Relapsing Fever	Incidence to 1921	Relaps. Fever	for each case of Typhus	increase to	Typhus incr.	
	1921	1922	1921	1922	1921	1922		
ern Region:								
aritzin	1.8	4.5	6.1	9.0	2.51	1.47	3.4	2.0
trakhan	—	10.1	—	9.2	—	—	—	0.9
lmuk Region	—	8.4	—	8.6	—	—	—	1.0
gion of Don	0.5	1.8	1.7	3.7	3.53	2.19	3.2	2.0
ibano-Chernomorsk	—	4.9	—	8.8	—	—	—	1.8
avropol	1.3	2.9	3.3	7.5	2.23	2.27	2.5	2.6
rek	—	5.3	—	8.9	—	—	—	1.7
ghestan	—	2.1	—	5.0	—	—	—	2.4
erheidjan	—	2.5	—	1.8	—	—	—	0.7
untain Republics	—	7.1	—	8.6	—	—	—	1.2
rn Region:								
tka	9.9	17.3	2.8	6.1	1.74	2.20	0.3	0.4
ayak Territory	—	37.3	—	17.3	—	—	—	0.5
m	8.4	26.8	2.2	9.8	3.19	4.50	0.3	0.4
aterinburg	7.2	26.7	9.6	30.6	3.72	3.18	1.3	1.1
men	2.2	10.0	2.8	9.0	4.64	3.25	1.3	0.9
liabinsk	3.5	4.5	8.8	15.8	1.29	1.78	2.5	3.5
hkir Republic	1.2	6.8	0.8	16.2	5.48	—	0.6	2.4
.	3.7	5.7	6.2	9.0	1.55	1.44	1.7	1.6
iz Republic:								
reev	—	0.5	—	1.5	—	—	—	2.9
lsk.	—	1.1	—	4.0	—	—	—	3.7
nburg	—	12.8	—	34.6	—	—	—	2.7
iubinsk.	—	3.5	—	8.7	—	—	—	2.5
stanai	—	1.1	—	4.9	—	—	—	4.4
nolinsk	—	2.8	—	11.6	—	—	—	4.2
upalatinsk	—	6.0	—	6.1	—	—	—	1.0
Total	0.9	4.5	3.6	10.9	5.26	3.04	4.2	2.4
stan:								
kmen	—	2.9	—	4.0	—	—	—	1.4
Daria	—	4.6	—	5.4	—	—	—	1.2
arkand	—	2.3	—	1.5	—	—	—	0.6
an	—	1.0	—	0.2	—	—	—	0.2
iretchinsk	—	1.5	—	1.8	—	—	—	1.2
Total	1.4	2.3	2.2	2.3	2.77	1.68	1.7	1.0
ts:								
k	—	4.8	—	6.7	—	—	—	1.4
sk	—	6.7	—	8.5	—	—	—	0.8
i	—	3.1	—	1.7	—	—	—	0.6
essei	—	8.0	—	6.5	—	—	—	0.8
o-Nicolaiev	—	3.8	—	5.2	—	—	—	1.4
tsk	—	5.9	—	2.1	—	—	—	0.4
Total	4.2	5.1	5.1	4.6	1.16	0.88	1.2	0.9
ys								
ys	—	—	—	—	3.77	2.05	1.6	0.9
vays	—	—	—	—	—	—	0.8	0.4
.	—	—	—	—	1.71	1.09	3.7	2.3
rmly	—	—	—	—	0.44	0.32	3.4	2.5
Grand Total	—	—	—	—	1.93	1.37	1.4	1.02

ANNEX 2.

**Number of Relapsing Fever Cases notified in Russia for each Case of Typhus
from September 1921 to November 1922.
Monthly Index for each Geographical Region.**

Month	Western	Northern	Central	South Central	Ukraine	Middle Volga	Southern	Eastern	Railways
September	1.79	0.59	1.14	3.15	4.76	1.53	6.22	1.74	4.23
October	2.10	0.49	1.40	2.91	3.29	1.03	4.94	2.23	2.95
November	1.99	0.40	1.30	3.37	2.98	1.30	3.74	1.31	1.96
December	1.30	0.76	0.95	2.73	2.03	0.93	2.61	1.04	1.34
January	0.90	0.52	0.78	1.77	1.29	0.66	1.50	0.73	0.96
February	0.75	0.35	0.58	1.50	0.97	0.62	1.36	0.61	0.89
March	0.55	0.30	0.46	1.18	0.92	0.57	1.34	0.55	0.84
April	0.49	0.28	0.43	1.03	0.88	0.51	1.32	0.53	0.71
May	0.45	0.27	0.47	1.21	0.99	0.59	1.50	0.52	0.83
June	0.70	0.34	0.73	1.43	1.52	0.82	2.66	0.84	1.20
July	1.32	0.80	1.13	2.19	2.58	1.38	3.37	1.33	2.15
August	1.46	0.80	1.62	2.80	3.99	2.76	4.48	2.39	3.48
September	2.00	0.72	2.06	2.42	4.28	2.47	5.42	2.25	3.51
October	1.85	0.59	1.59	3.02	3.86	1.92	4.09	1.54	—
November	1.06	0.47	1.40	2.45	—	1.18	2.86	1.44	—

ANNEX 3.

**Number of Anti-Choleric and Anti-Typhoid Vaccinations
performed by Russian Health Administration from January to August 1922.**

Governments	1st Injection	2nd Injection	3rd Injection	Total	Tetra-vaccine distributed by the A. R. A.
Western Region:					
Government of Petrograd	12,408	9,637	26	22,071	91,165
Government of Vitebsk	1,302	1,229	255	2,786	—
White Russian Republic	9,093	87	0	9,180	300,000
Central Region:					
Belian Community	45	45	40	130	
Changel	2,118	1,775	760	4,653	
Government of Severodvinsk	1,349	1,033	0	2,382	
Central Region	461	454	0	915	
South Region:					
Government of Rybinsk	300	120	0	420	
Vladimir	3,733	1,107	29	4,869	
Tver	2,743	2,223	2	4,968	
Smolensk	5,307	2,419	0	7,726	
Moscow	—	—	—	—	65,000
Tula	3,437	2,306	353	6,096	
Central Region:					
Government of Orel	9,941	6,551	0	16,492	
Tambov	13,381	9,655	3,088	26,124	
Voronezh	63,245	44,810	15,524	123,579	
Kursk	13,478	6,892	1,336	21,706	
Ukraine:					
Governorship of Volhynia	53,022	33,773	13,274	100,069	
Podolia	65,256	44,015	31,445	147,016	
Kiev	37,852	17,093	9,728	64,673	106,000 ¹
Chernigov	35,000	20,726	14,508	70,234	
Kremenchug	41,196	32,174	23,826	97,196	
Poltava	111,676	71,703	43,246	226,625	
Kharkov	67,008	51,403	28,542	146,953	250,000 ²
Odessa	192,039	146,862	107,905	446,806	155,898
Nicolaiev	130,680	81,169	16,860	228,709	
Ekaterinoslav	100,034	67,122	42,595	209,751	
Zaporozhe	124,015	96,439	67,692	288,146	145,453 ³
Donetz	178,783	115,975	60,200	354,958	
Day	155,952	102,594	62,854	321,400	
Yac	25,501	10,912	1,325	37,738	
ry	321,500	293,000	139,000	753,500	
Government not stated	878,409	608,638	291,143	1,778,190	
Total, Ukraine	2,517,923	1,793,598	954,143	5,265,664	

¹Includes Podolia and Chernigov.
²Includes Poltava and Kremenchug.
³Includes Donetz.

ANNEX 3 (continued).

Number of Anti-Choleric and Anti-Typhoid Vaccinations
performed by Russian Health Administration from January to August 1922.

Governments	1st Injection	2nd Injection	3rd Injection	Total	Tetra-v distribu by the A.
<i>Crimea</i>	80,288	80,288	80,288	240,864	15,0
<i>Middle Volga Region:</i>					
Tartar Republic	—	—	—	57,098	526,8
Government of Simbirsk	16,867	9,099	1,398	27,364	404,1
» » Penza	2,943	2,313	1,553	6,808	
» » Saratov	9,319	8,023	2,202	19,544	800,1
» » Samara	12,363	10,991	108	23,462	585,
German Communities	228	288	44	500	
<i>Southern Region:</i>					
Government of Tzaritzin	19,975	14,273	5,390	39,638	75,
» » Astrakhan	6,709	1,442	1,001	9,152	
» » Kalmuk Terr.	217	192	161	570	206,
Don Territory	11,010	7,523	2,109	20,642	
Kubano-Chernomorsk	69,571	56,268	58,319	184,158	
Government of Stavropol	1,291	615	448	2,354	
Terek	5,602	5,215	268	11,085	
Cherkasse Republic	1,068	930	451	2,449	
Kabardinsk	—	—	—	10,000	
Gorskaia Republic	13,225	10,002	347	23,574	
Azerbeidjan Republic	43,810	28,081	0	71,891	
<i>Eastern Region:</i>					
Government of Viatka	6,168	3,804	614	10,586	
Votyak Territory	—	—	—	7,144	
Government of Perm	14,662	6,232	1,507	22,401	
» » Ekaterinburg	104,254	73,768	—	178,022	
» » Tiumen	11,825	8,075	406	20,306	
» » Cheliabinsk	56,474	42,588	9,088	108,150	
Bachkir Republic	165,254	112,152	62,485	339,891	
Government of Ufa	—	—	—	—	1,601
<i>Kirghiz Republic</i>	22,968	9,800	2,879	35,647	7,
<i>Turkestan Republic</i>	24,580	19,585	4,281	48,446	
Total, Russia	3,360,935	2,395,428	1,210,903	7,041,697	5,401

ANNEX 4.

Composition of the Geographical Divisions of Russia adopted for the Statistical Tables of "Epidemiological Intelligence."

Considerable difficulty has been experienced in finding suitable limits for a geographical division of Russia into zones which are more or less homogeneous, at least from an epidemiological point of view. European Russia, which is one vast plain interrupted by no mountain chain or other considerable natural barrier of consequence, presents no sudden transitions neither ethnologically, anthropologically, economically nor epidemiologically, but the various groups are welded together through an infinite number of shadings.

One division of real importance is the region of the Black Soil in the south and the region of the Steppe Soil to the north, a division which is frequently used in recent statistical reports published by the Imperial Authorities. The Region of Steppe Soil is given as 790,000 square miles with 28,967,000 inhabitants, and the Region of Black Soil as 400,000 square miles with 31,197,000 inhabitants without counting the Ukraine.

Various divisions have been proposed by Russian economic authors based upon the predominant industries and the different agricultural methods; an interesting discussion of the problem with a view to an economic division is found in the report of the "Sub-Commission on the Division of Regions of the General Commission of Planning (Obstche Planovaia Kommissia)", under the Board of Labour and Defence, Moscow, 1921.

Neither of these divisions is suited for epidemiological purposes, and a somewhat different grouping has been adopted for this series of publications. A few changes appearing desirable, the position of the regions now adopted is given in detail below. It should be noted that these regions have no historical basis but are arranged primarily with reference to the prevalence of various diseases and also to the value of the official morbidity statistics conforming these considerations, as far as possible, to geographical conceptions.

Region or Government	Population in thousands
<i>Western Region :</i>	
City of Petrograd	706
Gov. of Petrograd	894
" Novgorod	906
" Pskov	1,250
" Vitebsk	1,353
Rep. of White Russia	1,634
Gov. of Gomel	2,375
Total	9,418
<i>Northern Region :</i>	
Murman Territory	19
Karelian Community	144
Gov. of Arkhangel	361
" Olonetz	217
" Cherepovetz	632
" Vologda	913
" Severodvinsk	632
Lapland Region	187
Gov. of Kostroma	1,204
Total	4,310

Region or Government	Population in thousands
<i>Central Region :</i>	
Gov. of Rybinsk	771
" Yaroslavl	651
" Ivanovo-Vosniessensk	660
" Vladimir	1,288
" Tver	1,813
" Smolensk	2,026
City of Moscow	1,028
Gov. of Moscow	1,666
" Kaluga	955
" Tula	1,725
" Riazan	2,158
Total	14,741
<i>South-Central Region :</i>	
Gov. of Briansk	983
" Orel	1,515
" Tambov	3,395
" Voronezh	3,063
" Kursk	2,713
Total	11,668

(Continued)

Region or Government

Population
in thousands

Region or Government

Population
in thousand

The Ukraine:

Dist. of Volhynia	1,712
" Podolia	2,725
" Kiev	3,598
" Chernigov	1,842
" Kremenchug	1,799
" Poltava	2,267
" Kharkov	2,478
" Odessa	1,911
" Nicolaiev	1,365
" Ekaterinoslav	1,736
" Zaporozhe	1,318
" Donetsk	3,318
Total	26,070

Southern Region :

Gov. of Tzaritzin	1,201
" Astrakhan	387
Kalmuk Region	126
Don Region	1,544
Gov. of Kubano-Chernomorsk.	2,930
" Stavropol	1,175
Terek	393
Mountain Republics	808
Daghestan Republic	798
Total	9,362

Transcaucasia :

Rep. of Georgia	2,372
Rep. of Azerbeidjan	2,097
Armenia	1,214
Total	5,683

Crimea 762

Middle Volga Region :

Gov. of Nijni-Novgorod	1,838
" Mariskaia Region.	300
Chuvach Region	751
Tartar Republic	2,852
Gov. of Simbirsk	1,657
" Penza	1,748
" Saratov	3,068
" Samara	2,820
German Communities	451
Total	15,481

Eastern Region :

Gov. of Viatka	2,051
Votyak Territory	681
Gov. of Perm	1,771
" Ekaterinburg	1,941
" Tiumen	1,117
" Cheliabinsk	1,341
Bachkir Republic	1,261
Gov. of Ufa	2,001
Total	12,221

<i>Kirghiz Republic</i>	5,051
<i>Turkestan Republic</i>	7,201
<i>Siberia</i>	8,081
<i>Republic of Extreme Orient</i>	1,841

RUSSIA, Total. 131,611

STATISTICAL TABLES
OF THE INCIDENCE OF EPIDEMIC DISEASES
IN EASTERN AND CENTRAL EUROPE
MAY - DECEMBER 1922.

TABLE No. 1.

Cases of Typhus notified in Central and Eastern Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type denote the number of cases.

Country or Region	Population in thousands	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	To Jan.
GERMANY	59182	27	22	15	3	2	2	0	8	
CZECHOSLOVAKIA	13596	27	16	2	5	0	1	3	26	
		4	3	1	1	1	0	0	0	
AUSTRIA	6420	2	2	2	1	0	0	0	0	
		1	1	1	1	0	0	0	0	
HUNGARY	7841	0	0	0	0	1	0	0	—	
		0	0	0	0	0	0	0	—	
KINGDOM OF THE SERBS, CROATS AND SLOVENES	12017	—	—	—	1	1	6	6	—	
BULGARIA	4861	86	39	13	2	4	3	25	41	
		8	12	4	4	0	0	4	2	
CONSTANTINOPLE	1300	35	19	18	17	6	5	13	10	
		2	0	2	2	1	0	0	0	
FINLAND	3332	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	
ESTHONIA	1750	16	13	7	8	1	0	1	5	
LATVIA	1728	249	111	48	26	19	19	26	29	
LITHUANIA	2700	492	164	61	53	20	30	63	77	
		24	17	8	0	0	2	4	7	
DANZIG	351	0	0	0	0	0	0	0	0	
		0	0	0	0	0	0	0	0	
POLAND:										
Western Zone	4038	11	2	9	7	5	3	4	—	
		1	1	0	2	1	0	1	—	
West Central Zone	6780	479	247	73	39	33	58	103	—	
		41	29	7	6	5	3	10	—	
East Central Zone	9191	1688	1058	429	272	162	185	277	—	
		155	97	53	30	16	24	20	—	
Eastern Zone	6866	3641	1542	709	436	261	269	516	—	
		193	55	30	20	19	12	31	—	
Poland, Total	26875	5819	2849	1220	754	461	515	900	—	
		390	182	90	58	41	39	62	—	
RUSSIA:										
Western Region	9118	7703	4082	1923	1083	614	595	297	75	
Northern Region	4310	4183	4729	2107	1108	909	768	1437	419	
Central Region	14741	24516	13469	5508	3439	1500	1630	2151	1071	
South Central Region . . .	11668	13236	6239	3653	2054	1494	1361	1420	242	
The Ukraine	26070	63766	35926	17262	6864	4256	3412	—	—	
Crimea	762	4483	4181	1170	463	160	106	113	27	
Southern Region	9363	7574	2038	1966	1026	439	421	760	191	
Middle Volga Region . . .	15483	32360	16469	7249	3672	2043	1036	1691	713	
Eastern Region	12264	38405	23256	13360	8423	5874	6223	7430	1057	
Siberia	9258	—	—	—	—	—	—	—	—	
Kirghiz Republic	5059	2209	1482	278	203	110	85	45	—	
Turkestan	7202	1918	1253	375	882	87	28	123	44	
Railways	—	19113	11060	4821	1589	825	—	—	—	
Waterways	—	4383	1255	352	234	142	113	—	—	
Red Army, Navy and Prisons	—	3024	446	251	145	62	—	—	—	
Russia, Total	125295	226873	125885	60275	31185	18515	15778	15467	3839*	

Note: No data are available for Roumania or Greece. For January-April, see *Epidemiological and Hygiene* No. 4, pages 10-11.

* Incomplete data for two weeks only. † January to April.

† Including 7,211 cases from January-July, not specified in Bachkir Republic.

‡ Including 15,812 cases period unstated.

§ Including 7,739 cases, period unstated, in the Red Army.

TABLE No. 2.

Cases of Relapsing Fever notified in Central and Eastern Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type denote the number of cases.

Country or Region	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Jan.-Dec.
ANY	1	3	3	10	0	0	0	3	31
OSLOVAKIA	14	4	7	1	1	0	0	0	35
IA	0	0	0	0	0	0	0	0	0
ARY	0	0	0	0	0	0	0	—	0
DOM OF THE SERBS, ATS AND SLOVENES	—	—	—	4	0	1	0	—	5
RIA	0	0	0	0	0	—	—	—	0
ANTINOPLE	—	—	1	0	0	0	0	0	1
ND	0	0	0	1	0	0	0	0	1
NIA	0	8	11	2	6	5	2	3	41
A	12	16	14	7	4	4	3	1	91
ANIA	27	16	29	6	2	10	13	9	116
	0	1	0	0	0	0	0	0	10
G	0	0	0	0	0	0	0	0	24
									0
D:									
tern Zone	0	1	6	1	0	0	5	—	16
	0	0	1	0	0	0	0	—	1
t Central Zone	26	10	1	6	2	3	0	—	202
	2	0	0	0	0	0	0	—	3
Central Zone	470	428	283	252	128	76	111	—	7048
	26	19	18	9	4	3	6	—	336
ern Zone	3070	2072	1431	1275	694	646	742	—	32364
	60	37	43	25	22	13	23	—	1061
Poland, Total	3566	2511	1721	1534	824	725	858	—	39630
	88	56	62	34	26	16	29	—	1401
:									
ern Region	3485	2841	2541	1580	1225	1099	314	25	36097
hern Region	1144	1592	1682	887	655	450	669	315	12673
ral Region	11525	9839	6227	5575	3083	2607	2680	1272	94984
h-Central Region	16063	8941	8012	5752	3620	4106	3472	411	107819
Ukraine	63214	54586	44471	27371	18231	14861	—	—	405440
ea	1966	1521	970	632	234	161	116	33	8089
hern Region	11332	5421	6630	4598	2379	1723	2172	886	80214
le Volga Region	19071	13438	9996	10142	5054	1993	1994	150	150751
ern Region	20085	19590	17708	20143	13222	9622	10715	1528	185332
ia	—	—	—	—	—	—	—	—	36125*
niz Republic	4130	2985	1751	1956	1236	605	332	—	57611
estan	2060	1561	563	1404	215	133	358	117	27396
vays	15874	13319	10344	5525	2893	—	—	—	133274
erways	1549	877	528	718	432	211	45	—	10783
Army, Navy and Prisons	6098	1985	780	776	269	—	—	—	89410
Russia, Total	177586	138496	112203	87059	52748	37571	22867	4737	1435998

Note: No data are available for Roumania or Greece. For January-April, see *Epidemiological Intelligence* pages 12 and 13.

January-April. † Incomplete data for two weeks only.

Including 14,681 cases from January to July, not specified, in Bachkir Republic.

Including 13,700 cases, period unstated.

Including 15,732 cases, period unstated, in the Red Army.

TABLE No. 3.
Cases of Cholera notified in Eastern Europe, 1922.

Government or Region	Jan. to April	May	June	July	Aug.	Sept.	Period not stated
POLAND	1	0	8	41	71	0	—
ROUMANIA	0	0	0	18	0	0	—
RUSSIA:							
<i>Western Region :</i>							
City of Petrograd	0	1	0	0	0	0	—
Gov. of Petrograd	0	0	0	0	1	1	—
Vitebsk	2	0	0	38	78	3	6
White Russia	0	0	0	18	0	0	—
Gomel	0	21	10	13	0	1	—
Total	2	22	10	69	79	5	—
<i>Northern Region :</i>							
Gov. of Arkhangel	0	0	0	0	1	81 ¹	—
» Cherepovets	0	0	1	0	0	0	—
» Vologda	0	0	1	5	138	0	—
» Severodvinsk	0	0	0	0	11	0	—
» Kostroma	0	0	1	19	1	0	—
Total	0	0	3	24	151	81	—
<i>Central Region :</i>							
Gov. of Rybinsk	0	2	0	1	4	0	—
» Yaroslavl	0	0	0	17	9	0	—
» Ivanovo-Vozniessensk	0	0	0	2	0	0	—
» Tver	0	0	0	4	0	—	—
» Smolensk	0	0	2	9	5	1	—
City of Moscow	11	46	35	98	95	16	—
Gov. of Moscow	0	18	5	18	11	0	—
» Tula	7	20	2	0	0	0	—
» Ryazan	2	11	5	41	85	49	—
Total	20	97	49	190	209	66	—
<i>South-Central Region :</i>							
Gov. of Bryansk	8	0	0	0	0	0	—
» Orel	15	2	7	50	34	0	—
» Tambov	57	13	1	41	14	0	—
» Voronezh	131	65	56	91	0	0	—
» Kursk	163	103	115	405	268	0	28
Total	374	183	179	587	316	0	—
<i>The Ukraine:</i>							
District of Volhynia	127	7	85	109	20	1	0
» Podolia	1	54	87	172	80	0	9
» Kiev	416	87	168	480	163	12	378
» Chernigov	43	71	91	205	308	36	0
» Kremenchug	78	220	259	825	92	1	16
» Poltava	926	354	211	531	112	10	0
» Kharkov	529	218	417	1381	241	8	112
» Odessa	52	2664	3465	7680	1534	16	0
» Nicolaiev	242	494	984	3092	67	0	629
» Ekaterinoslavl	153	132	316	2025	541	6	0
» Zaporozhe	34	891	875	3131	223	0	0
» Donetsk	89	418	860	2421	697	29	0
Total	2690	5610	7818	22052	4078	119	1144

¹ Including first week of October.

TABLE No. 3 (continued).

Cases of Cholera notified in Eastern Europe, 1922.

Government or Region	Jan. to April	May	June	July	Aug.	Sept.	Period not stated	Total
<i>Finland (continued):</i>								
<i>Finland</i>	0	228	1153	1429	561	—	—	3371
<i>Middle Volga Region:</i>								
Gov. of Nijni-Novgorod . .	0	6	1	93	92	0	—	192
Region of Mariskaia	0	0	1	0	2	0	—	3
Chuvach Republic	4	0	0	5	2	0	—	11
Tartar Republic	0	1	2	0	88	0	—	91
Gov. of Simbirsk	12	3	32	90	9	0	—	146
» Penza	30	44	46	171	33	0	—	324
» Saratov	14	12	28	210	86	0	—	350
» Samara	127	27	53	61	53	0	—	321
German Communities	0	0	0	5	0	0	—	5
Total	187	93	163	635	365	0	—	1443
<i>Southern Region:</i>								
Gov. of Astrakhan	38	32	155	558	319	1	—	1103
Gov. of Astrakhan	11	81	1018	221	16	0	—	1347
Kalmuk Republic	0	7	9	141	0	0	—	157
Region of Don	381	341	610	1127	117	8	—	2584
Gov. of Kubano-Chernomorsk	178	522	1590	1883	1145	185	—	5503
» Stavropol	70	157	191	164	13	0	—	595
» Terek	14	184	193	141	43	0	—	575
Cherkasse Republic	0	2	9	48	41	11	—	111
Ingoshkaia Republic	45	192	127	97	40	3	—	504
Republic of Daghestan	10	32	59	32	4	37	—	174
Republic of Azerbeidjan . . .	39	61	165	108	51	0	—	424
Total	786	1611	4126	4520	1789	245	—	13077
<i>Northern Region:</i>								
Gov. of Viatka	0	0	1	16	35	5	—	57
Gov. of Perm	0	0	0	135	85	0	—	220
» Ekaterinburg	0	11	11	83	67	5	—	177
» Tiumen	16	74	124	235	450	19	—	918
» Cheliabinsk	0	0	15	108	287	5	19	434
» Cheliabinsk	3	44	66	23	9	0	—	145
Gov. of Ufa	0	3	2	123	147	31	—	306
Total	192	239	353	770	1080	65	—	2699
<i>Polish Republic</i>	562	65	296	675	429	0	26	2053
<i>Russian Republic</i>	166	189	407	692	964	124	65	2607
<i>Polish Republic</i>	25	106	—	—	—	—	9177	9308
ways	735	697	821	2064	307	—	160	4784
erways	0	39	4	6	6	7	535	595
Army	510	79	251	77	—	—	422	1339
ns	4	0	4	8	16	0	—	32
Russia, Total	6253	9258	15637	33798	10318	712	11582	87588

Note: No case of cholera has been notified in the governments of Novgorod, Pskov, Murman, Olonetz, and Kaluga, nor in the Zirian or Karelian Regions.

No case of cholera has been observed in any of the countries of Central or Eastern Europe not mentioned. For details of data for January to April, see *Epidemiological Intelligence* No. 4, pages 8 and 9.

Including first week of October.
Of which 108 in October, government not stated.

TABLE No. 4.

Cases of Dysentery notified in Central and Eastern Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
SWITZERLAND	0	0	0	0	3	0	0	0	0	53
GERMANY	231	430	427	548	1062	842	381	234	154	53
	29	36	32	38	61	49	44	34	21	13
CZECHOSLOVAKIA	51	46	65	121	172	383	177	44	44	15
	2	5	6	5	30	44	35	3	4	2
AUSTRIA	85	99	110	167	264	133	42	40	—	16
	18	19	19	24	34	37	8	3	—	2
HUNGARY	44	43	76	414	940	510	206	67	—	23
	2	4	11	35	138	77	41	9	—	2
KINGDOM OF THE SERBS, CROATS AND SLOVENES	—	—	—	—	878	624	290	166	—	15
	—	—	—	—	107	96	47	29	—	7
BULGARIA	2	8	36	0	0	0	0	—	—	8
CONSTANTINOPLE	4	2	1	3	3	2	1	2	—	3
FINLAND	0	9	5	22	37	56	43	16	12	0
ESTHONIA	0	1	5	21	150	93	17	12	8	2
LATVIA	4	9	24	137	397	246	70	16	2	1
LITHUANIA	4	4	20	97	145	43	6	5	4	1
	0	0	0	3	5	1	0	0	0	1
DANZIG	2	0	0	1	0	0	0	0	1	—
POLAND :										
Western Zone	19	48	61	191	668	635	151	53	—	8
	2	5	1	14	56	64	20	7	—	1
West-Central Zone . .	20	45	62	379	934	660	130	39	—	3
	5	7	16	54	168	156	60	8	—	4
East-Central Zone . .	23	32	55	257	1420	774	225	64	—	10
	3	9	10	34	263	191	44	9	—	8
Eastern Zone	79	114	129	810	3554	1474	357	110	—	5
	9	2	7	40	210	107	33	3	—	—
Poland, Total . . .	141	239	307	1637	6576	3543	863	266	—	4
	19	23	34	142	697	518	157	27	—	1
RUSSIA (without Ukraine) .	7539	3271	—	—	—	—	—	—	—	1
THE UKRAINE	3520	4626	4465	5079	7736	4735	2628	—	—	1

Note: No data are available for Roumania or Greece. Recent data have not been received for January to March, see *Epidemiological Intelligence* No. 4, pages 19 and 20.

¹ Includes the months of August to November only.
² January-May.

TABLE No. 5.

Cases of Smallpox notified in Central and Eastern Europe, 1922.

The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Jan. - Dec.
IRELAND	71	96	63	31	100	71	42	263	273	1153
ALBANIA	105	55	16	13	1	4	1	1	1	207
CZECHOSLOVAKIA	3	6	7	1	3	0	3	1	0	84
FINLAND	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>12</i>
FRANCE	1	0	0	0	0	0	2	0	0	3
GERMANY	0	0	0	0	0	0	0	0	—	2
ARMENIA OF THE SERBS, MONTENEGRO AND SLOVENES	—	—	—	—	30	21	45	55	—	350 ¹
YUGOSLAVIA	—	—	—	—	13	5	9	12	—	81
ITALY	—	1	0	0	0	0	6	4	2	18
NETHERLANDS	—	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>
CONSTANTINOPLE	—	—	—	12	8	21	33	66	150	290
EGYPT	6	6	7	1	4	6	12	30	39	132
INDIA	9	11	3	1	0	0	1	0	0	90
CHINA	0	3	0	0	0	1	0	0	0	23
AFGHANISTAN	24	30	21	5	15	4	1	5	1	160
IRAN	58	89	16	10	5	5	0	2	3	345
AFGHANISTAN	5	6	1	1	0	0	0	1	0	30
AFGHANISTAN	0	0	0	0	0	0	0	0	0	0
AFGHANISTAN	29	9	2	5	3	1	0	1	—	84
AFGHANISTAN	<i>2</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	—	<i>11</i>
AFGHANISTAN	75	89	37	34	20	16	35	25	—	610
AFGHANISTAN	<i>14</i>	<i>19</i>	<i>6</i>	<i>6</i>	<i>3</i>	<i>2</i>	<i>12</i>	<i>6</i>	—	<i>107</i>
AFGHANISTAN	252	184	99	66	54	26	5	24	—	1033
AFGHANISTAN	<i>81</i>	<i>58</i>	<i>19</i>	<i>20</i>	<i>12</i>	<i>4</i>	<i>2</i>	<i>4</i>	—	<i>352</i>
AFGHANISTAN	90	155	80	27	14	10	7	5	—	569
AFGHANISTAN	5	10	7	1	2	1	0	0	—	40
Poland, Total	446	437	218	132	91	53	48	55	—	2296
Poland, Total	<i>102</i>	<i>88</i>	<i>32</i>	<i>28</i>	<i>17</i>	<i>9</i>	<i>14</i>	<i>10</i>	—	<i>510</i>
Poland, Total	5837	5893	3068	2062	1244	860	977	—	—	36786
Poland, Total	1254	1595	856	694	312	143	325	—	—	9009

Note: No data are available for Roumania or Greece. For January to March, see *Epidemiological Bulletin* No. 4, pages 17 and 18.

¹ Includes months of January to March and August to November.

TABLE No. 6.

Cases of Typhoid Fever notified in Central and Eastern Europe, 1921

Note: The figures in *italics* denote the number of deaths, those in ordinary type denote the number of cases

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
SWITZERLAND . . .	8	4	10	15	9	17	27	47	46	27	28	25
GERMANY	583	553	795	532	719	1032	1142	1403	1277	1092	1180	685
	31	23	26	12	20	33	41	43	49	29	37	28
CZECHOSLOVAKIA .	579	430	420	470	374	426	746	873	851	641	491	359
	46	45	50	52	48	39	51	68	63	53	34	37
AUSTRIA	208	81	119	136	182	176	202	379	327	202	160	—
	17	13	16	23	25	15	22	30	39	17	10	—
HUNGARY	362	128	124	266	288	181	357	874	1087	894	646	—
	32	24	18	29	34	21	36	76	118	116	79	—
KINGDOM OF SERBS, CROATS, SLOVENES	223	—	—	—	—	—	—	482	545	659	495	—
	—	—	—	—	—	—	—	43	45	73	65	—
BULGARIA	199	77	67	28	27	40	—	—	—	—	—	—
	34	19	13	—	8	7	—	—	—	—	—	—
CONSTANTINOPLE .	—	—	—	—	—	—	139	353	136	89	32	16
	2	2	4	4	3	3	8	16	11	12	7	1
FINLAND	106	53	57	55	48	42	172	217	201	158	117	72
ESTHONIA	118	47	59	31	32	56	38	110	78	74	51	50
LATVIA	108	57	48	47	63	57	106	130	105	111	99	53
LITHUANIA	127	176	100	119	65	92	93	127	103	64	48	26
	3	3	2	8	1	5	3	3	1	1	2	1
DANZIG	9	8	3	3	6	1	10	11	5	2	8	4
	1	2	0	1	2	0	1	0	1	1	3	0
POLAND:												
Western Zone . .	58	51	38	59	58	40	59	167	142	160	137	—
	1	3	6	2	6	6	7	11	4	13	8	—
West-Cent. Zone	518	479	483	304	375	261	274	659	848	763	642	—
	50	65	54	26	32	24	24	46	59	79	56	—
East-Cent. Zone.	657	451	527	379	466	337	359	770	1099	736	647	—
	66	58	54	52	40	30	26	54	73	69	61	—
Eastern Zone. .	1029	856	1038	681	733	393	371	526	582	497	410	—
	56	37	55	29	38	8	13	20	21	23	23	—
Poland, Total	2262	1837	2086	1423	1632	1031	1063	2122	2571	2156	1836	—
	173	163	169	109	116	68	70	131	157	176	148	—
RUSSIA (without Ukraine). . .	34627	30440	29573	18608	19780	12421	10345	15104	12698	8884	—	—
THE UKRAINE . .	14706	14644	11043	8357	8833	5527	4054	4646	4559	5611	—	—

Note: No data are available for Roumania or Greece.

¹ Includes the months of January and August to November.

Cases of Malaria notified in Russia and Poland, January-November 1922.

Government or Province	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Not specified	Total
POLAND:													
Western Zone	0	0	1	2	15	1	8	8	3	4	9	—	51
West Central Zone	4	4	6	7	24	48	47	15	15	8	0	—	178
East Central Zone	1	6	41	116	281	325	300	220	175	111	104	—	1688
Bialystok	10	24	17	19	43	53	47	26	23	19	13	—	294
Vilna	—	—	—	8	23	16	28	28	13	5	5	—	126
Novogrodek	1	9	88	202	562	607	307	223	135	66	35	—	2235
Polesia	14	31	372	511	1426	1738	1257	1232	380	186	97	—	7244
Volhynia	23	70	375	542	1151	813	995	763	289	193	195	—	5409
Tarnopol	0	1	0	1	1	1	2	1	2	4	2	—	15
Poland, Total	53	145	900	1408	3526	3602	2991	2516	1035	596	460	—	17232
RUSSIA:													
<i>Western Region:</i>													
City of Petrograd	4	7	26	42	89	72	36	25	10	17	14	—	342
Novgorod	17	19	58	62	109	78	31	4	11	2	3	—	394
Pskov	4	11	10	17	14	2	—	6	—	—	—	—	64
Vitebsk	1	2	14	19	15	6	8	—	—	—	—	—	65
Gomel	70	22	78	97	109	141	141	185	66	76	45	—	1030
Total	96	61	186	237	336	299	216	220	87	95	62	—	1895
<i>Northern Region:</i>													
Karelian Communes	—	—	—	—	—	5	—	1	—	—	—	—	6
Arkhangel	36	99	634	985	2501	330	577	373	179	148	157	—	6019
Olonetz	—	—	2	2	—	1	1	—	—	—	—	—	6
Cherepovetz	81	171	182	167	216	112	58	46	46	54	—	—	1133
Vologda	16	6	22	30	104	59	31	22	22	11	2	—	325
Severodvinsk	39	108	1164	2222	2715	1860	400	613	324	59	62	—	9566
Zirian Region	17	18	57	90	44	165	51	21	21	12	—	—	496
Kostroma	28	—	—	—	—	—	—	—	—	—	8	—	36
Total	217	402	2061	3496	5580	2532	1118	1076	592	284	229	—	17587

TABLE No. 7 (continued).

Cases of Malaria notified in Russia and Poland, January-November 1922.

Government or Province	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Not specified	Total
Russia (continued):													
<i>Central Region:</i>													
Rybinsk	25	34	7	—	—	—	—	60	84	16	—	—	226
Yaroslavl	7	8	3	8	22	7	17	2	—	—	—	—	74
Ivanovo-Vozniessensk	25	41	189	249	630	482	240	70	—	—	—	—	1926
Vladimir	263	291	1032	1362	3151	2263	1002	1955	1144	697	437	—	13574
Tver	46	30	93	91	109	54	18	29	18	13	—	—	501
Smolensk	38	55	68	444	211	118	406	109	113	35	45	—	1042
City of Moscow	45	57	143	202	328	234	175	475	399	228	203	—	2489
Gov. of Moscow	383	614	2110	3298	4812	5171	3293	5865	2077	389	621	—	28633
Kaluga	112	121	133	495	210	119	57	64	62	83	119	—	1275
Tula	17	22	37	59	80	33	55	8	—	—	—	—	311
Total	961	1273	3815	5608	9553	8481	4963	8619	3894	1461	1425	—	50051
<i>South-Central Region:</i>													
Briansk	86	97	169	230	238	157	199	159	115	62	47	—	1559
Tambov	—	—	—	—	—	—	—	—	—	—	—	—	2074
Voronezh	24	45	247	371	948	608	380	2585	826	1468	606	—	6515
Kursk	537	555	721	825	979	1046	519	856	755	184	297	—	6793
Total	647	697	1137	1426	2165	1811	1098	3600	1696	1714	950	—	16941
<i>Crimea</i>													
Total	68	33	58	69	103	117	141	135	275	229	168	—	1396
<i>Southern Region:</i>													
Tzaritzin	689	246	962	813	2178	2494	1673	4914	5096	2643	3259	—	24967
Kalmuk Region	41	145	343	447	208	326	337	606	423	261	—	—	3137
Region of Don	—	—	—	—	—	—	2163	6238	6651	1838	1369	10912 ¹	29171
Kubano-Tchernomorsk	2985	2840	2864	3081	3701	3793	5139	12272	10734	5448	—	—	52857
Stavropol	—	—	11	18	17	20	87	945	4151	2164	569	102919 ²	110901
Terek	2	16	53	13	57	—	3249	4174	5828	—	—	—	13392
Tcherkassie Republic	—	—	—	8	35	49	40	43	182	90	96	—	543
Kabardinsk	112	109	153	97	159	149	291	604	1082	538	—	—	3294
Gorskaia	—	—	—	—	—	—	2443	—	945	1242	—	—	4600
Daghستان	5600	7700	11600	14700	1920	25150	3610	48900	41600	2500	13500	—	176780
Azerbeidjan	4123	2952	3246	5405	6842	7609	7891	9052	9215	10722	7313	—	74370
Total	13552	14008	19232	24582	15117	39590	26923	87748	85907	27416	26106	113831	494012

Cases of Malaria notified in Russia and Poland, January-November 1922.

Government or Province	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Not specified	Total
Russia (continued):													
<i>Middle Volga Region:</i>													
Chuvach Region	—	—	—	—	—	—	—	—	—	539	592	—	1131
Tartar Republic	2337	2592	3482	4935	3250	4520	333	1002	1644	—	—	—	24095
Simbirsk	928	2470	5084	5716	9663	4756	4788	6885	11613	6573	—	—	58476
Penza	359	555	1265	1292	1370	1067	831	881	923	677	532	—	9752
Saratov	—	—	—	—	—	—	—	—	—	—	—	—	—
Samara	—	—	—	—	—	—	—	10032	17516	12508	16028	40000 ¹	40000
German Communities	—	—	—	—	—	524	624	3307	3868	2337	1667	56444 ¹	142528
Total	3624	5617	9831	11943	14283	10867	6576	22107	35564	22634	18819	22968 ²	35295
<i>Eastern Region:</i>													
Viatka	171	216	606	758	1190	1280	617	460	600	267	189	—	6354
Votyak Territory	350	240	762	1096	1885	1791	—	—	—	—	—	—	6124
Perm	289	272	778	695	1075	837	559	—	—	—	—	—	4505
Ekaterinburg	810	739	664	1163	1328	762	797	792	613	624	—	—	8292
Tiumen	—	—	—	—	—	—	7	3	6	63	—	—	79
Tcheliabinsk	191	155	276	255	194	115	122	132	138	104	96	—	1778
Bachkir Republic	—	—	—	—	—	—	—	—	958	1896	1796	—	4650
Total	1811	1622	3086	3967	5672	4785	2102	1387	2315	2954	2081	—	31782
<i>Kirghiz Republic:</i>													
Turkestan	2733	2835	3729	4741	2882	3273	3726	10018	6894	3367	2850	—	47048
Siberia	12139	14751	13476	10515	8439	10459	8789	9795	10658	5812	—	—	104833
Railways	40	32	51	—	810	63	—	—	—	—	—	—	996
Waterways	2093	3563	3454	12530	5680	5544	8662	22548	12706	—	—	—	76880
Total	603	575	2938	2724	3199	3398	1325	—	—	—	—	—	15262
Russia, Total	38584	45469	63054	81838	73819	94219	66139	167351	160588	65966	52690	232243	1139960

¹ January to July.² January to June.

STATISTICAL TABLES OF THE INCIDENCE OF CERTAIN OTHER EPIDEMIC DISEASES IN VARIOUS EUROPEAN COUNTRIES, JANUARY-DECEMBER 1922.

TABLE No. 8.

Cases of Diphtheria notified in certain Countries of Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type denote the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
ENGLAND and WALES.	5537	5205	5605	3730	4586	3589	3646	3700	3492	4035	4995	4077	
HOLLAND	534	426	528	356	417	364	292	290	320	275	472	431	
	50	48	19	27	23	24	12	8	16	19	29	34	
BELGIUM	295	235	193	184	205	165	159	154	133	90	194	136	
SWITZERLAND	640	445	457	333	327	256	227	256	361	363	427	317	
GERMANY	4035	3586	4144	2611	3270	2425	2289	2752	2726	2967	3941	3203	
	180	115	103	72	67	46	45	46	59	64	105	113	
CZECHOSLOVAKIA . .	389	317	311	247	246	215	163	191	230	335	321	279	
	26	37	21	19	19	11	16	15	16	30	30	37	
AUSTRIA	307	221	291	210	271	171	169	187	179	235	257	—	
	28	28	31	15	12	12	8	8	18	17	16	—	
HUNGARY	352	211	255	179	200	167	142	224	188	209	279	—	
	37	30	35	24	16	18	11	20	18	23	36	—	
ITALY	1333	1035	1137	794	845	544	530	759	812	763	1139	832	
DENMARK	1103	721	807	549	502	421	430	451	523	683	874	—	
NORWAY (Cities only)	89	70	76	63	86	42	38	64	78	102	76	—	
	9	0	2	3	2	1	2	2	2	3	1	—	
SWEDEN	812	572	563	449	529	499	383	449	560	554	654	524	
FINLAND	195	234	195	149	132	90	121	125	145	189	203	163	
ESTHONIA	52	63	51	43	29	36	24	52	30	45	35	62	
LATVIA	60	96	85	51	66	44	43	43	60	49	51	50	
LITHUANIA	28	37	27	40	25	22	20	30	12	20	19	12	
	1	1	2	2	2	4	2	1	0	0	1	0	
DANZIG	8	14	11	9	13	12	10	8	9	13	21	18	
	1	0	3	1	0	0	0	0	0	0	1	1	
POLAND:													
Western Zone	76	78	96	51	57	58	48	62	60	97	142	—	
	10	6	9	8	1	5	7	4	4	10	15	—	
West-Cent. Zone . . .	47	44	58	47	48	41	39	29	50	55	68	—	
	10	16	10	9	1	2	3	5	6	9	8	—	
East-Cent. Zone. . . .	103	118	117	89	88	48	60	91	89	116	151	—	
	20	16	9	13	12	4	6	16	12	17	21	—	
Eastern Zone.	142	152	275	139	139	82	101	114	91	124	120	—	
	6	16	8	7	8	5	3	5	5	7	10	—	
Poland, Total	368	392	546	326	332	229	248	296	290	392	481	—	
	46	54	36	37	22	16	19	30	27	43	54	—	
The UKRAINE	1389	1141	1169	1052	1055	668	797	765	627	1215	—	—	
RUSSIA													
(without Ukraine)	2228	2416	2731	1617	1995	1481	1619	1702	1371	1062	—	—	

TABLE No. 9.

Cases of Scarlet Fever notified in certain Countries of Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Jan.-Dec.
WALES	10689	9289	10334	7578	9945	6991	7637	7632	7352	9083	12374	9020	107924
AND	247	229	264	205	243	176	240	209	295	265	519	384	3276
	<i>4</i>	<i>2</i>	<i>6</i>	<i>5</i>	<i>5</i>	<i>2</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>6</i>	<i>0</i>	<i>35</i>
UM	125	150	113	115	104	98	107	141	83	102	182	90	1410
ERLAND	691	239	248	137	143	110	103	101	103	91	185	119	2270
ANY	3125	2614	2912	1905	2235	1918	1961	2634	3131	3076	4107	2825	32443
	<i>46</i>	<i>26</i>	<i>26</i>	<i>16</i>	<i>21</i>	<i>22</i>	<i>15</i>	<i>10</i>	<i>15</i>	<i>25</i>	<i>25</i>	<i>25</i>	<i>272</i>
OSLOVAKIA	1222	801	803	704	791	933	685	597	764	1221	1198	1066	10785
	<i>133</i>	<i>90</i>	<i>77</i>	<i>85</i>	<i>97</i>	<i>116</i>	<i>93</i>	<i>62</i>	<i>79</i>	<i>103</i>	<i>121</i>	<i>132</i>	<i>1208</i>
IA	289	167	204	159	234	157	138	174	218	295	288	—	2323
	<i>11</i>	<i>12</i>	<i>5</i>	<i>5</i>	<i>7</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>1</i>	<i>2</i>	<i>7</i>	—	<i>59</i>
ARY	2490	1186	1141	896	895	802	714	839	1096	1257	1009	—	12325
	<i>264</i>	<i>216</i>	<i>207</i>	<i>148</i>	<i>120</i>	<i>135</i>	<i>136</i>	<i>136</i>	<i>159</i>	<i>182</i>	<i>178</i>	—	<i>1881</i>
.	986	621	1013	697	811	779	651	825	896	768	1487	998	10532
ARK	604	452	404	356	347	337	356	391	344	431	627	—	4649
AY (Cities only)	60	91	74	84	66	73	42	47	64	92	119	—	812
	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	—	<i>4</i>
EN	770	614	738	698	737	767	582	507	685	1412	1928	1272	10710
ND	117	117	129	96	84	83	61	42	35	48	89	89	990
NIA	70	51	69	38	42	20	4	38	38	38	93	93	594
.	206	188	183	155	127	127	88	46	60	120	128	170	1598
ANIA	88	67	56	30	28	31	32	11	21	48	17	8	437
	<i>8</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>5</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>2</i>	<i>0</i>	<i>26</i>
.	18	12	15	6	10	5	3	12	9	17	11	8	126
	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>3</i>
D:													
ern Zone	69	52	105	67	101	77	76	136	178	140	188	—	1189
	<i>7</i>	<i>12</i>	<i>8</i>	<i>11</i>	<i>4</i>	<i>5</i>	<i>9</i>	<i>9</i>	<i>9</i>	<i>15</i>	<i>13</i>	—	<i>102</i>
-Cent. Zone	229	190	163	147	166	154	161	180	198	225	289	—	2802
	<i>40</i>	<i>44</i>	<i>14</i>	<i>18</i>	<i>23</i>	<i>16</i>	<i>19</i>	<i>19</i>	<i>32</i>	<i>24</i>	<i>23</i>	—	<i>272</i>
-Cent. Zone.	907	572	630	412	474	373	486	474	605	618	642	—	6193
	<i>170</i>	<i>97</i>	<i>121</i>	<i>88</i>	<i>67</i>	<i>57</i>	<i>99</i>	<i>94</i>	<i>100</i>	<i>118</i>	<i>126</i>	—	<i>1137</i>
ern Zone.	532	414	637	279	321	311	278	374	335	410	451	—	4342
	<i>46</i>	<i>21</i>	<i>37</i>	<i>26</i>	<i>15</i>	<i>17</i>	<i>32</i>	<i>33</i>	<i>20</i>	<i>41</i>	<i>43</i>	—	<i>331</i>
land, Total	1737	1228	1535	905	1062	915	1001	1164	1316	1393	1570	—	13826
	<i>263</i>	<i>174</i>	<i>180</i>	<i>143</i>	<i>109</i>	<i>95</i>	<i>159</i>	<i>155</i>	<i>161</i>	<i>198</i>	<i>205</i>	—	<i>1842</i>
RAINE	2726	2189	1624	1395	1262	787	659	802	874	1615	—	—	13933
out Ukraine)	5932	5858	6230	2561	3256	2404	2285	2732	2453	1986	—	—	35697

TABLE No. 10.

Cases of Cerebro-Spinal Meningitis notified in certain Countries of Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
ENGLAND and WALES.	27	32	39	39	33	19	35	28	21	34	22	22	341
HOLLAND	14	13	7	13	19	12	9	8	3	8	8	18	140
	5	7	5	1	12	13	4	3	3	4	5	7	
BELGIUM	1	7	3	6	0	8	2	6	6	3	4	2	45
SWITZERLAND	2	6	3	4	0	0	1	4	2	0	3	5	24
GERMANY	76	106	201	196	268	172	116	116	88	90	95	98	1,365
	12	23	30	28	42	25	26	22	21	27	26	28	
CZECHOSLOVAKIA	4	21	24	28	23	35	19	14	9	13	12	13	198
	1	9	7	15	8	9	6	8	3	6	3	7	
AUSTRIA	2	1	4	3	5	3	1	3	6	1	4	—	27
	2	0	5	3	7	3	4	3	4	0	0	—	
HUNGARY	20	3	6	0	0	6	0	1	1	1	0	—	28
	0	1	4	0	0	2	0	0	0	1	0	—	
ITALY	2	5	9	12	8	6	1	3	3	4	2	6	63
CONSTANTINOPLE	1	2	0	4	2	1	2	0	0	0	1	—	13
DENMARK	2	8	11	7	16	7	8	6	1	7	7	—	75
NORWAY (Cities only)	1	1	0	1	1	0	0	1	0	0	0	0	4
	1	0	0	1	0	0	0	1	1	0	0	0	
SWEDEN	5	3	9	8	7	12	13	3	2	8	8	15	93
FINLAND	0	0	0	0	0	0	0	0	0	0	0	1	1
ESTHONIA	3	3	2	1	1	0	2	0	0	0	0	—	9
LATVIA	0	—	—	—	—	—	—	—	—	—	—	—	—
LITHUANIA	—	—	7	3	4	0	0	0	0	0	0	1	14
	—	—	2	0	0	0	0	0	0	0	0	0	
DANZIG	0	0	0	0	0	0	0	0	0	0	0	0	0
POLAND:													
Western Zone	1	3	5	4	9	1	25	24	7	3	9	—	78
	2	1	2	0	0	3	4	3	8	4	3	—	
West Cent. Zone	6	9	20	19	10	11	6	15	9	6	16	—	104
	11	11	14	16	12	3	8	9	6	11	18	—	
East Cent. Zone.. . . .	14	21	43	17	20	14	10	14	4	5	8	—	146
	7	5	12	9	8	6	4	10	6	3	9	—	
Eastern Zone.	6	4	22	9	17	9	8	4	5	7	3	—	105
	2	1	5	2	2	2	2	2	2	0	0	—	
Poland, Total	27	37	90	49	56	35	49	57	25	21	36	—	458
	22	18	33	27	22	14	18	24	22	18	30	—	

TABLE No. 11.

Cases of Acute Poliomyelitis notified in certain Countries of Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Jan.-Dec.
ENGLAND and WALES	26	15	17	13	17	12	23	42	58	49	60	17	349
IRELAND	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	—	—	—	—	—	6
FRANCE	3	0	0	2	1	3	8	9	8	13	9	9	65
GERMANY	0	0	1	0	1	1	2	2	2	2	1	—	12
NETHERLANDS	11	14	25	9	7	10	26	121	120	97	120	27	587
SPAIN	4	8	1	4	3	2	3	12	10	6	4	—	57
SWEDEN (Cities only)	0	0	0	1	0	0	2	0	0	1	1	0	5
SWITZERLAND	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	1
UNITED STATES	6	5	4	5	5	9	10	14	13	20	14	7	112
YUGOSLAVIA	8	4	1	6	1	0	9	2	2	1	4	0	38

TABLE No. 12.

Cases of Encephalitis Lethargica in certain Countries of Europe, 1922.

The figures in italics denote the number of deaths, those in ordinary type the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Jan.-Dec.
ENGLAND and WALES	23	46	68	53	60	25	20	48	28	23	34	35	463
IRELAND	<i>9</i>	<i>5</i>	<i>8</i>	<i>4</i>	<i>3</i>	<i>4</i>	<i>1</i>	—	—	—	—	—	34
FRANCE	3	0	2	2	2	3	2	2	2	1	2	0	21
GERMANY	7	5	14	13	3	1	1	2	1	4	6	5	62
NETHERLANDS	8	4	4	4	4	1	6	2	1	0	2	—	36
NETHERLANDS (Cities only)	1	0	2	1	0	0	0	0	0	1	2	0	7
NETHERLANDS	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0</i>	3
NETHERLANDS	14	8	16	6	13	7	4	19	5	5	19	45	161
NETHERLANDS	8	16	8	6	2	1	1	0	1	1	1	1	46
NETHERLANDS	0	1	1	2	0	0	0	0	0	0	0	0	4
NETHERLANDS	—	—	—	—	—	11	9	23	9	0	2	4	58

TABLE No. 13.

Cases of Influenza notified in certain Countries of Europe, 1922.

Note: The figures in *italics* denote the number of deaths, those in ordinary type the number of cases.

Country or Region	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
ENGLAND & WALES													
(large towns) . .	<i>4871</i>	<i>3036</i>	<i>849</i>	<i>394</i>	<i>260</i>	<i>96</i>	<i>86</i>	<i>71</i>	<i>79</i>	<i>147</i>	<i>314</i>	<i>232</i>	4,871
HOLLAND	<i>1677</i>	<i>1529</i>	<i>280</i>	<i>77</i>	<i>27</i>	<i>12</i>	<i>6</i>	—	—	—	—	—	6,123
SWITZERLAND . .	22701	28999	7680	442	122	24	7	19	16	39	53	112	2,899
GERMANY (large towns)	<i>2995</i>	<i>1026</i>	<i>576</i>	<i>338</i>	<i>185</i>	<i>82</i>	<i>72</i>	<i>59</i>	<i>66</i>	<i>117</i>	<i>440</i>	<i>900</i>	8,900
DENMARK	135017	70214	10947	6151	3852	1502	861	912	1061	1391	2191	—	2,061
NORWAY (Cities only)	37405	9134	1206	537	314	222	111	139	239	331	643	—	1,206
	<i>108</i>	<i>65</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	—	1,080
SWEDEN	39250	41637	7224	1932	652	77	56	56	148	282	574	783	41,637
FINLAND	14301	9433	10177	7148	2046	681	514	720	1016	2056	3352	3619	14,301
LATVIA	65	100	6	3	0	0	27	4	0	0	0	21	193
CONSTANTINOPLE .	7	48	42	16	10	4	4	1	0	0	1	7	127

ADDITIONAL RESULTS OF THE RUSSIAN CENSUS OF 1920.

The classification of the information obtained by the Russian census of 1920 and by the supplementary figures collected from those governments in which no census was taken in 1920 is gradually being completed by the Central Statistical Bureau in Moscow. In the first official statistical year published in Moscow in 1922, additional data are found regarding the sex distribution of the population in each government and also the age distribution in about twenty governments. Although they represent merely a fraction of the whole of Russia, the data are fairly representative, because they refer to districts in widely separated regions and present various points of interest, which warrant analysis, even before the final and complete reports become available.

Direct comparison with the census returns of earlier date is difficult because of the considerable changes made by the present Administration in the administrative divisions. Up to 1917, European Russia was divided into 53 governments, not counting Finland and Poland, of which about eight have been lost since the War. European Russia was composed, in 1922, of 42 governments, 6 allied or autonomous republics (of which the Ukraine consists of 12 governments) and 11 regions with varying degrees of self-government. The boundaries of nearly all the governments have, at the same time, been changed.

The population estimates of 1914 have been distributed according to the new administrative divisions by the Central Statistical Bureau at Moscow, and it is now possible to form some opinion as to where the huge losses of population have occurred. The reported rate of increase or decrease of population in each government is illustrated on the map, page 50. It should be borne in mind, however, that the population data for 1914 are nothing but an estimate based upon the census returns of 1897 and the registers of births and deaths in each district, and due importance has probably not been attached to the influence of migration. This estimate has, it is said, been revised by the Russian Central Statistical Office, which considers that the numbers are now approximately correct.

Apart from the depopulation of the large cities, already described in previous numbers, which, in the case of Moscow and Petrograd, reaches 40 and 65 per cent. respectively, a belt, in which marked depopulation has occurred, stretches without interruption from the White Russian country in the north to Astrakhan in the south-east, with an arm running southwards across the Ukraine towards the Black Sea. This belt covers regions of great variety, thinly populated swamps and poor soils in the extreme west, well-populated districts in the centre, and steppes in the east; the proportion of women in this belt is not everywhere low. In fact the deficiency of men is less marked than in the north, which rather points towards other reasons than the military losses as a primary cause of the extreme depopulation as compared with other regions.

Several factors have evidently been active, and their effect is difficult to separate owing to unsatisfactory demographical data; there is little doubt, however, that the great epidemics, particularly the influenza of 1918 and 1920, have had a considerable influence in forming this belt of depopulation. The combined incidence of typhus and relapsing fever for the two years 1919-1920 reach a maximum of 124 cases per 1,000 inhabitants in the government of Orel, which is about in the centre of this belt, where the population decreased by 16 %. In the neighbouring governments the corresponding incidence was 124 per 1,000 population in Kursk, 146 in Voronej, 148 in Tambov, 100 in Riazan, 115 in Kaluga and 81 in Gomel; the rate of incidence is distinctly lower elsewhere, ranging

from only 10 to 40 per 1,000 in the northern governments. The incidence of the two diseases exceeds 10% of the population in most governments of the Volga and Ural region, but the inevitably heavy mortality appears to have been more than counterbalanced by immigration; these regions are excluded therefore, from the following table, which classifies the governments of Northern, Western and Central Russia according to percentage loss of population and to the reported rate of incidence of typhus and relapsing fever in the years 1919-1920.

Percentage decrease of population :

Epidemic Incidence	Under 5	5—9.9	10 and over
Under 50	5	4	0
50—99	3	3	4
100 and over	1	1	4

This table shows that the higher the epidemic incidence the greater the decrease of population, provided that various irregularities due to other causes such as migrations are taken into account. This can be demonstrated in various other ways; of the 25 governments here considered, the incidence of typhus and relapsing fever was less than 50 per 1,000 in nine; in these nine governments the mean intercensal decrease of the population was 3.9 %. The corresponding epidemic incidence was more than 50 per 1,000 but less than 100 in 10 governments, and the mean decrease of population was here 8.2%. In six governments where the epidemic incidence exceeded 100 per 1,000 inhabitants the population had decreased 11.0% on the average, or, if leaving Tula, where the industries had attracted new population, out of consideration, the decrease in this group averages 12.7% ¹.

A less pronounced, but still marked, loss of population is shown in all the remainder of European Russia, except in the Crimea and some districts of the Eastern Ukraine where refugees were especially numerous at the time, and also in the region of the Middle Volga and in the Kuban and other districts where new rural settlement may have taken place; the increase in the latter regions does not exceed a few per cent. In the Ural districts the increase of population is, on the other hand, marked and exceeds everywhere 10 per cent. A similar increase has occurred throughout Siberia. It seems that Asiatic Russia has gained at the expense of European Russia, and this movement is likely to have been intensified by the Great Famine.

The general distribution of the population had not been greatly altered up to the time of the 1926 census; its density is indicated in the different governments on the chart, page 50. The greatest density of population is in Podolia, which forms the eastern extension of Galicia, where 86 inhabitants live on each square km. (about the same density as in Bavaria and more than in France). From this point a fairly well-populated wedge, with its base in the Ukraine, stretches in a curve north-east, gradually disappearing north-east of Moscow. The Volga region contains 30 to 40 inhabitants per square km. on the western bank, and less than 30 on the eastern bank. Further east there is a density of less than 10 inhabitants per square km. Petrograd, now on the very outskirts of the Empire, is situated in a thinly populated region.

¹ A more definite measure is furnished by the coefficient of correlation between the decrease of population, as shown by the census, and the reported incidence of typhus and relapsing fever, for the same 25 governments. This coefficient is found to be :

$$r = 0.548 \pm 0.094$$

The coefficient being thus six times the probable error, a definite association between the two observed facts is indicated. The mathematical probability that this correlation should be due to chance is as small as 1 to 11764.

The sex distribution of the population, which is now available for the whole area where the census was taken, is of interest in furnishing some information on the regional distribution of military service. The men who were serving in the army at the time of the census have not been included in the returns, and allowance for this must be made; the number of men under the colours has been given by Mikhailovsky, Chief of the Central Statistical Bureau, as 3 millions, but they have probably been recruited evenly from the various regions of the State.

Pronounced geographical variations of sex distribution are shown by the map on page 50; in the bordering districts and allied republics, the proportion of men is far higher than in Russia proper; in the Kirghiz Republic the men are even in excess, while in Siberia, the Caucasus, the Crimea, the Ukraine and White Russia, the sex proportion was, at the time of the census, either normal or the number of men inferior to the number of women by not more than 10 per cent. It is in Great Russia that the proportion of men is the lowest; here the deficiency of men almost everywhere exceeds 10 per cent., while in eight governments of the central region round Moscow, the men number only 75 per cent. of the women.

This deficiency of men is due to causes differing according to age. Losses in the world-war and losses in the revolutionary war were heaviest among men of 25 to 40 at the time of the census; military service has affected mainly younger men, while disease and lack of nutrition has influenced the population at all ages. A certain migration of men from the country to the towns has occurred, although it has not made good the entire loss of urban population. The distribution according to age for each of the 23 governments of the central region is given below for the 175 rural *ouyezds* and for the 23 governments to which our data relate.

PERCENTAGE DISTRIBUTION BY AGES.

Ages	Males.		Females.		No. of men per 100 women	
	Urban	Rural	Urban	Rural	Urban	Rural
Under 5	9.2	13.4	7.6	10.7	100	100
5-9	12.2	17.6	10.4	14.4	96	98
10-14	12.3	16.2	11.0	13.2	93	99
15-19	9.7	9.8	10.7	10.7	75	73
20-24	7.2	3.5	10.7	8.0	56	36
25-29	8.4	4.0	9.5	7.0	74	46
30-39	15.8	9.9	14.0	11.3	93	70
40-49	12.6	10.0	10.8	9.1	96	88
50-59	7.7	7.5	8.2	7.3	78	83
60 and over	4.9	8.1	7.1	8.3	57	78
All ages	100.0	100.0	100.0	100.0	83	80

In Russia as a whole the proportion between the sexes is 83 males to 100 females in the towns and 80 males to 100 females in the rural districts — quite a small difference. When analysed according to age, however, the difference becomes much larger. While the proportion of male and female children in the country and urban districts is normal, the deficiency of men of 20 to 40 is more pronounced in the rural districts than in the cities. At ages over 50, on the other hand, the proportion of men is lower in the cities than in the country, while at ages over 60 the difference, in fact, is pronounced. This fact is somewhat difficult to explain, but it is observed consistently in the European areas of Russia, and the only exceptions are the two Siberian governments for which data are available. The proportion of old women is also a little higher in the country than in the cities.

The proportion of children is, of course, higher in the country than in the towns, as is seen from following figures:

Ages	<i>Urban</i>			<i>Rural</i>		
	Children	Per 1000 popul.	% of C	Children	Per 1000 popul.	% of C
A. Under 3 years	292,309	49.7	72	1,714,623	75.4	76
B. 3-5 »	319,281	54.3	78	1,670,158	73.4	74
C. 6-8 »	407,602	69.3	100	2,258,263	99.3	100

The deficiency of children during the revolutionary period is even greater than here indicated since, owing to the high mortality in early childhood in Russia, a considerable number of these children will presumably die before reaching the age of three. It seems probable that the revolution has affected the birth-rate in the cities more than in the country districts, while the reverse seems to have been the case during the Great War; the differences may have been due to a shifting of the adult population to other conditions that cannot be ascertained from the data.

The proportion between the sexes is fairly normal and also fairly equal in town and country up to the age of 16 years. At 17 years the census shows 81 men per 100 women in the towns and 80 in the country; at the age of 18 the ratio is 63 in the towns and 64 in the rural districts. At the age of 19 the deficiency of men becomes very pronounced, probably due to military conscription, while the urban and rural ratios begin to differ; the ratios are 49 in the urban and 34 in the rural areas. While up to this age military losses can have had no material influence, they must have been very high in the following age groups, and particularly so from 25 to 39 years, which correspond roughly to the ages of those who bore the brunt of the fighting during the War. The deficiency of men at these ages will be felt for the next fifty years and remain noticeable at each future census. The proportion between the sexes at the ages from 17 to 39 years is given below for those areas of the geographical divisions for which data are available.

Ages	Male	Female	Ratio	Male	Female
<i>Western Region.</i>				<i>Northern Region.</i>	
17	28,516	38,525	74.0	23,368	29,333
18	20,845	37,645	55.4	17,629	27,133
19	10,788	33,027	32.7	7,750	24,595
20-24	42,012	162,453	25.9	39,560	115,742
25-29	75,287	142,249	52.9	46,580	102,803
30-39	175,705	218,345	80.5	122,640	167,053
<i>Central Region.</i>				<i>Eastern Region.</i>	
17	95,631	126,442	75.6	48,747	55,594
18	73,964	119,730	61.8	35,266	52,249
19	34,667	103,837	33.4	17,466	44,658
20-24	180,041	476,794	37.8	81,718	223,687
25-29	201,643	413,561	48.8	98,864	193,783
30-39	491,480	679,047	72.4	237,384	315,508
<i>Southern Region</i>				<i>Asiatic Russia.</i>	
17	57,306	71,523	80.1	22,562	24,044
18	44,734	65,845	67.9	15,102	23,580
19	24,474	51,691	47.3	7,988	21,375
20-24	116,422	253,039	46.0	62,016	100,328
25-29	126,076	230,341	54.7	71,682	88,001
30-39	236,483	338,796	69.8	132,014	142,365

Although the number of men has decreased far more than the number of women, even the latter have been affected by the events of the six years preceding the census; the number of female children diminished just as much as the number of male children. The loss of population according to the sustained by European Russia up to 1920 can be roughly shown in the following table. In this table the age distribution in the whole of Russia in 1920 is assumed to be identical with the known distribution in the previously mentioned area. The 1914 population has been arranged in the table according to the age groups shown in the 1897 census. The figures can, of course, only be considered approximate.

POPULATION OF EUROPEAN RUSSIA IN 1914 AND 1920, ESTIMATED BY GROUPS OF AGES DERIVED FROM THE CENSUS RETURNS OF 1897 AND 1920.

<i>Male Population</i>				
Ages	1914	1920	Increase or Decrease	Per cent.
Under 5	8,296,371	5,743,913	— 2,552,458	— 30.8
5- 9	6,667,305	7,528,563	+ 861,258	+ 12.9
10-14	6,154,850	7,051,433	+ 896,583	+ 14.6
15-19	5,313,346	4,486,858	— 826,488	— 15.6
20-29	8,587,661	4,239,117	— 4,348,544	— 50.6
30-39	6,715,853	5,083,271	— 1,632,582	— 24.3
40-49	5,005,873	4,817,179	— 188,694	— 3.8
50-59	3,544,028	3,472,957	— 71,071	— 2.0
60 and over	3,641,125	3,408,727	— 232,398	— 6.4
Unknown	16,193	45,879	+ 29,686	—
All ages	53,942,605	45,877,897	— 8,064,708	— 15.0

<i>Female Population</i>				
Ages	1914	1920	Increase or Decrease	Per cent.
Under 5	8,236,568	6,535,925	— 2,600,643	— 31.6
5- 9	6,664,283	7,574,148	+ 909,865	+ 13.7
10-14	6,101,570	7,093,781	+ 992,211	+ 16.3
15-19	5,698,845	5,987,822	+ 288,977	+ 5.1
20-29	8,843,415	8,937,048	+ 93,633	+ 1.1
30-39	6,862,888	6,641,343	— 221,545	— 3.2
40-49	5,091,998	5,267,272	+ 175,274	+ 3.4
50-59	3,745,901	4,161,312	+ 415,411	+ 11.1
60 and over	3,905,888	4,507,623	+ 601,735	+ 15.4
Unknown	16,554	50,272	+ 33,718	—
All ages	55,167,910	55,856,546	+ 688,636	+ 1.2

The table shows that the male population of European Russia has decreased by about 8 millions, and the female population has increased slightly, but it should be borne in mind that the population

would normally have increased by about 9 per cent. during this period. All age groups thus show a decrease from the normal with the exception of children from 5 to 14 years of age and over 50 years. The table shows that the female population has suffered the greatest loss at the age of 30 to 39, but the effects of emigration and disease cannot be separated.

If the estimated normal increase of population of about 9 % can be accepted, there would have been an increase of approximately 9,800,000 persons; instead of this increase there is actually a decrease shown of about 4,400,000, allowing for the size of the army (3,000,000 men), whose numbers were included in the census. The losses due to the war and revolution have been estimated by M. Mikhailov at about $3\frac{1}{2}$ millions. Taking into account these losses, there would remain a total deficit from the expected population, had normal conditions prevailed, of something like $10\frac{1}{2}$ millions. This deficit may be said to be due to three principal causes: diminished birth-rate, disease and emigration. It is impossible to estimate, without more specific data, the amount of loss which should be attributed to each of these causes.

Disease and famine have continued to reduce the population during the two years which have passed since the census, and the birth-rate has remained very low. The extensive and continuing depopulation is therefore an important factor in the general economic situation.

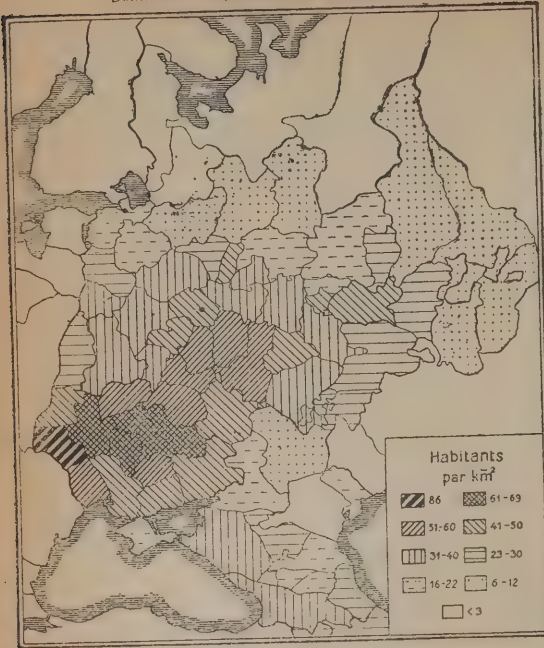
PROPORTIONATE INCREASE OR DECREASE OF THE POPULATION OF RUSSIA FROM 1914 TO 1920
THE DENSITY OF POPULATION AND THE RATIO OF MALES TO FEMALES
INDICATED BY THE CENSUS OF 1920.

Government	Inhabitants per sq. km.	Percentage of increase or decrease	No. of men per 100 women	Government	Inhabitants per sq. km.	Percentage of increase or decrease	No. of men per 100 women
<i>Western Region:</i>				<i>The Ukraine (continued):</i>			
Gov. of Petrograd . .	2,824	— 64.8	72.2	Gov. of Kremenchug	62	— 9.6	80.5
Gov. of Petrograd . .	21	— 2.6	77.0	» Poltava . .	62	— 16.6	91.1
Novgorod . .	18	— 0.9	79.5	» Kharkov . .	66	— 6.0	89.0
Pskov . . .	29	— 6.5	78.5	» Odessa . . .	60	— 0.3	88.2
Vitebsk . .	34	— 18.6	82.6	» Nicolaiev . .	49	— 9.3	83.5
Russian Rep. . .	27	— 14.1	96.9	» Ekaterinoslav	57	+ 11.4	90.6
Gov. of Gomel . . .	38	— 14.8	82.8	» Zaporozhe . .	48	— 19.1	80.1
				» Donetsk . . .	45	+ 17.3	89.0
<i>Western Region:</i>				<i>Crimea</i>			
German Territory . .	0	+ 46.0	138.5		20	+ 12.4	95.7
Belian Comm. . .	2	— 6.1	80.8	<i>Middle Volga Region:</i>			
Gov. of Arkhangel . .	0.6	— 0.2	77.6	Gov. of Nijni-Novgorod	36	— 6.0	75.1
Olonetz . .	3	— 7.1	76.0	Mariskaia Region . .	19	— 7.6	77.5
Cherepovetz . .	10	— 4.8	77.1	Chuvach Region . . .	44	+ 1.8	84.2
Vologda . .	9	— 2.8	78.5	Tartar Republic . . .	43	— 6.3	82.9
Severodvinsk . .	6	+ 1.9	81.4	Gov. of Simbirsk . .	39	+ 0.5	78.1
Zirian Region . .	0.7	— 5.8	77.7	» Penza . . .	45	— 2.1	79.8
Kostroma . .	16	— 5.3	74.6	» Saratov . .	32	+ 3.4	81.1
				» Samara . .	27	+ 5.1	81.6
<i>Western Region:</i>				German Comm. . . .	23	+ 3.9	88.6
Gov. of Rybinsk . .	26	+ 1.2	71.6	<i>Southern Region:</i>			
Yaroslavl . .	41	+ 3.8	72.8	Gov. of Tzaritzin . .	12	— 21.0	76.2
Ivanovo-				» Astrakhan . .	18	— 8.9	79.6
Vosniessensk . .	36	— 7.6	73.5	Kalmuk Territory . .	1	— 18.9	87.5
Vladimir . .	33	— 16.7	74.2	Don Region.	21	— 2.8	79.6
Tver . . .	33	— 4.0	74.7	Kubano-Chernomorsk	31	+ 1.6	85.7
Smolensk . .	35	— 5.6	78.3	Stavropol.	23	— 4.6	86.3
Gov. of Moscow . . .	3,371	— 40.3	95.4	Terek	11	+ 3.2	89.9
Gov. of Moscow . .	46	— 5.3	72.8	Gorskaia Republic . .	18	+ 11.5	100.8
Kaluga . . .	41	— 11.0	72.1				
Tula . . .	56	— 2.3	82.0	<i>Eastern Region:</i>			
Riazan . .	51	— 16.7	77.8	Gov. of Viatka . . .	19	— 10.7	76.9
				Votyak Region . . .	24	— 10.5	77.3
<i>Central Region:</i>				Gov. of Perm . . .	8	— 5.9	77.2
Gov. of Briansk . .	36	— 9.0	83.2	» Ekaterinburg	12	— 0.3	80.9
Orel . . .	56	— 16.0	80.0	» Tiumen . .	1	+ 14.7	88.0
Tambov . .	51	+ 2.1	82.1	» Cheliabinsk . .	12	+ 14.8	79.3
Voronezh . .	46	— 9.4	82.2	Bachkir Republic . .	12	+ 4.4	88.9
Kursk . . .	59	— 10.5	84.3	Gov. of Ufa	28	+ 6.1	87.0
				<i>Kirghiz Republic . . .</i>	2	+ 13.1	—
<i>Ukraine:</i>				<i>Siberia</i>	0.8	+ 22.5	—
Gov. of Volhynia . .	45	— 2.9	78.2				
Podolia . .	86	— 16.3	83.2				
Kiev . . .	68	— 4.6	84.9				
Chernigov . .	55	— 13.0	86.9				

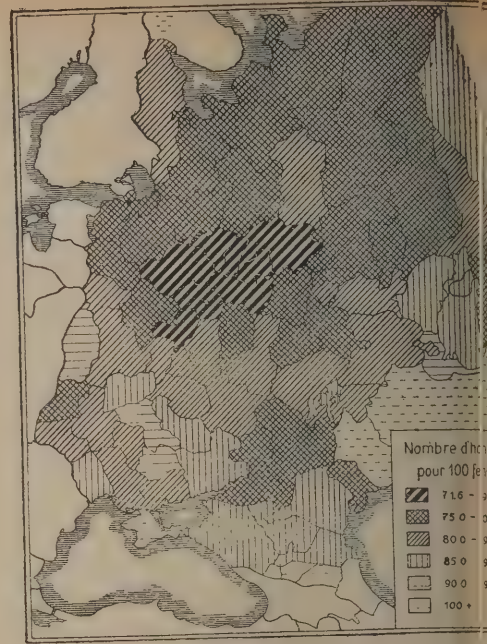
Note: No census has been taken in Turkestan or the Transcaucasian Republics.

Elements of the Russian Census Statistics of 1920 and corresponding data for y

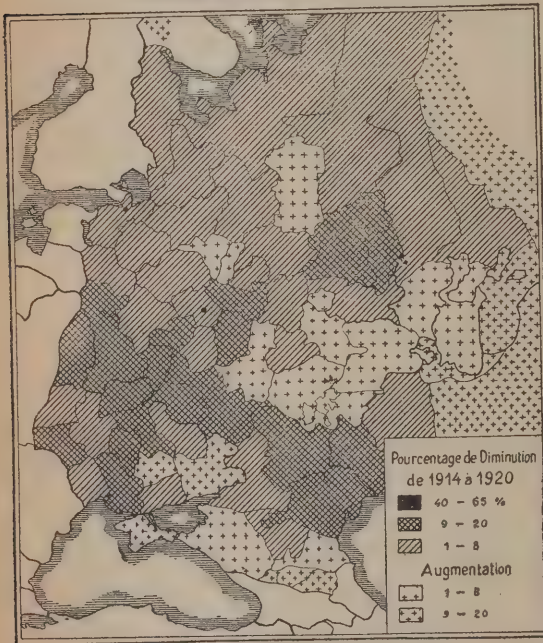
Densité de la Population - Recensement 1920.



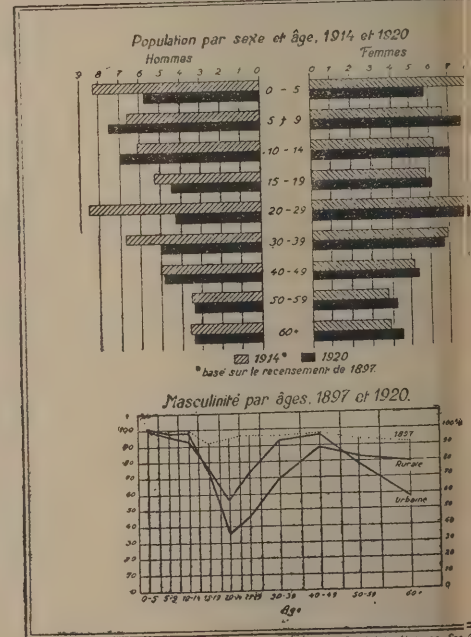
Proportion des Sexes - Recensement 1920.



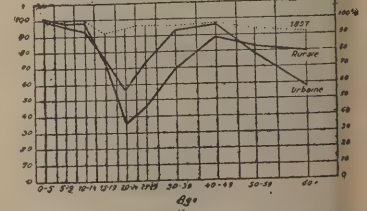
Mouvement de la Population 1914-1920



Russie d'Europe
Population par sexe et âge 1914 et 1920



Masculinité par âges, 1897 et 1920.



LEAGUE OF NATIONS

HEALTH SECTION

EPIDEMIOLOGICAL INTELLIGENCE

STATISTICS OF NOTIFIABLE DISEASES
IN EUROPEAN COUNTRIES

1922

N° 7

GENEVA
OCTOBER 1923

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20. Roumania
21. Czechoslovakia
22. Russia
23. Ukraine

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NUMBER OF CASES OF CHOLERA, RELAPSING FEVER, TYPHUS AND SMALLPOX NOTIFIED IN THE
DIFFERENT GOVERNMENTS OF RUSSIA DURING THE YEARS 1918, 1919, 1920, 1921 AND 1922

1. Cholera
2. Relapsing Fever
3. Typhus
4. Smallpox

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ANNUAL TOTALS OF CASES OF DISEASES NOTIFIED IN SCOTLAND, 1922

ANNEX IV.

ANNUAL TOTALS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES IN SPAIN, 1922

INTRODUCTION.

The present report contains a compilation of the statistics on notifiable diseases from official sources in European countries during the year 1922, with the exception of Albania, Greece, France, Portugal, for which no reports were available.

The statistics are for cases only, except for certain countries in which deaths from notifiable diseases are currently reported. Since the statistics are compiled from current reports, they must be regarded as provisional and subject to revision in the annual summaries which are later issued by the several countries.

The method of presentation of these data adopted for the present report is to give the official statistics as transmitted to the Service of Epidemiological Intelligence and Public Health Statistics in the Health Section in a series of tables for each country, which are given in the Annexes, and to summarise the data according to diseases in brief comments in the text. In the chapters dealing with the prevalence of specific diseases, certain additional data have been introduced in order to permit comparisons of 1922 with previous years, to describe the occurrence of epidemics within countries, and to give other official information which appeared to possess epidemiological interest. The presentation of the data is limited, obviously, by the amount of information available at this time.

It is hardly necessary to emphasise the facts that statistics of cases of notifiable diseases do not constitute complete information on their actual prevalence and that they are less complete in some countries than in others. In the present report comparisons of countries have not been made except in a very general way in certain instances, and the caution is frequently reiterated against drawing conclusions from tables showing the reported prevalence of diseases by countries.

In spite of the recognised shortcomings of statistics such as these, the reports from the various countries possess so great epidemiological value in indicating the general and the seasonal course of diseases, in showing the occurrence of epidemics, and in suggesting the general distribution of certain diseases in Europe, particularly the more serious epidemic diseases, that their compilation in a single report in response to a desire on the part of many epidemiologists and public health services has seemed to be advisable.

TYPHUS AND RELAPSING FEVER.

The prevalence of typhus and relapsing fever in central and eastern Europe during 1922 has been rather fully discussed in previous numbers of *Epidemiological Intelligence* and in the *Epidemiological Reports*, particularly in *Epidemiological Intelligence* No. 6. Only a brief statement summarising the material already presented will be given here, together with new statistical tables containing revised figures based upon more complete information and showing certain additional details.

In Tables 1 and 2 the reported incidence of these two diseases in European countries in 1921 and 1922 is shown.

TABLE 1.

REPORTED INCIDENCE OF TYPHUS IN EUROPEAN COUNTRIES, 1921 AND 1922.

Country.	Number of cases notified.		Indicated rate per 100,000	
	1921	1922	1921	1922
Austria.	81	23	1.3	0.3
Belgium	11	8	0.14	0.1
Bulgaria	874	488	18	10
Czechoslovakia	948	417	7	3
Danzig.	0	3	0	0.3
England and Wales	3	14	0.008	0.4
Estonia	345	163	20	9
Finland.	32	1	0.96	0.3
France (Paris).	2	0	0.07	0
Germany.	640	381	1.1	0.4
Hungary	71	17	0.91	0.3
Italy.	60	0	0.15	0
Latvia	1,288	1,480	79	91
Lithuania.	3,004	3,409	120	136
Norway (cities only)	0	2	0	0.3
Poland.	44,835	40,792	166	152
Roumania	7,532	3,782	46	23
Russia	632,225	1,431,395	480	1,084
Kingdom of the Serbs, Croats and Slovenes	1,139	232	9.5	1.1
Switzerland.	2	0	0.05	0
Turkey (Constantinople)	204	238	16	18

TABLE 2.

REPORTED INCIDENCE OF RELAPSING FEVER IN EUROPEAN COUNTRIES IN 1921 AND 1922.

Country	Number of cases notified.		Indicated rate per 100,000.	
	1921	1922	1921	1922
Bulgaria	4	0	0.08	0
Czechoslovakia	16	35	0.12	0.26
Danzig.	1	0	0.28	0
Estonia	119	91	6.8	5.2
Finland.	2	1	0.06	0.03
Germany.	0	31	0	0.05
Latvia	275	116	17.	7.1
Lithuania.	1,031	910	41.	36.
Poland.	14,163	40,245	53.	150.
Russia	779,822	1,479,627	591.	1,121.
Roumania	4,487	428	28.	2.6
Kingdom of the Serbs, Croats and Slovenes	0	21	0	0.17
Turkey (Constantinople) . . .	155	1	12.	0.08

is already well-known, the area of greatest prevalence of typhus and relapsing fever during was Russia. The incidence rate for typhus, based upon notified cases only, in that country was per 100,000 population, and for relapsing fever 1,121 per 100,000, both rates being many times than those for any other countries in Europe. The next highest rates prevailed in the group of countries along the western and south-western border of Russia. West of these countries, the incidence of the two diseases was almost, if not entirely, sporadic.

In order to permit of a more detailed picture of the prevalence of typhus and relapsing fever in eastern and central European countries, the rates have been computed from the notified cases for governments in Russia and in similar detail for other eastern European countries and are shown on shaded maps on pages 14 and 15. The differences in the rates between governments, or provinces, can be interpreted with a very great degree of accuracy because of the probably great differences in completeness of notification, but in a general way it properly may be assumed that the areas of greatest prevalence are fairly well indicated. Two areas of highest prevalence are shown, one in the west and another in eastern and northeastern Russia. It is interesting to note that the eastern provinces of Poland, bordering on the western boundary of Russia, exhibited higher rates than the western provinces.

TABLE 3.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN RUSSIA, 1922, BY GOVERNMENTS.

Region or Gov.	Rate per 100,000 population.		Region or Gov.	Rate per 100,000 population.	
	Typhus	Relapsing fever		Typhus	Relapsing fever
Region:			Gov. of Pskov.	302	113
Gov. of Petrograd . . .	1,038	601	» Vitebsk	508	401
Gov. of Petrograd . . .	390	150	Rep. of White Russia .	738	781
Novgorod	370	122	Gov. of Gomel	645	454

TABLE 3 (continued).

Rate per 100,000 population.			Rate per 100,000 population.		
Region or Gov.	Typhus	Relapsing fever	Region or Gov.	Typhus	Relapsing fever
<i>Northern Region:</i>			<i>Crimea</i>	1,878	1
Murman Territory . . .	2,858	3,726	<i>Middle Volga Region:</i>		
Rep. of Carelia . . .	1,158	518	Gov. of Nijni-Novgorod .	1,006	
Gov. of Arkhangel . .	437	306	Mariskaia Region . . .	2,292	
» Olonetz	316	57	Chuvach Region . . .	1,103	
» Cherepovetz . .	380	130	Tartar Republic	1,370	
» Vologda	1,086	486	Gov. of Simbirsk . . .	2,377	
» Severodvinsk . .	881	265	» Penza	1,560	
Zirian Region	285	132	» Saratov	1,332	
Gov. of Kostroma . . .	740	257	» Samara	910	
			German Communities . .	2,981	
<i>Central Region:</i>			<i>Southern Region:</i>		
Gov. of Rybinsk . . .	1,175	665	Gov. of Tzaritzin . . .	474	
» Yaroslav	1,724	655	» Astrakhan	1,015	
» Ivanovo-Vos. . .	845	432	Kalmuk Region	818	
» Vladimir	1,265	529	Don Region	219	
» Twer	587	254	Gov. of Kubano-Tch. .	565	
» Smolensk	832	524	» Stavropol	302	
City of Moscow	1,829	1,745	» Terek	523	
Gov. of Moscow	1,405	1,000	Region of Cherkasse . .	43	
» Kaluga	1,451	918	» Kabardinsk	5	
» Tula	856	613	Rep. of Gorskaia	570	
» Riazan	685	427	» Daghestan	193	
<i>South-Central Region:</i>			<i>Transcaucasia:</i>		
Gov. of Briansk	878	1,299	Rep. of Azerbeidjan . .	259	
» Orel	804	1,280	» Georgia	314	
» Tambov	550	867			
» Voronezh	387	682	<i>Eastern Region:</i>		
» Kursk	866	988	Gov. of Viatka	1,925	
<i>Ukraine.</i>	1,373	1,929	Votiak Region	4,259	
Gov. of Zaropozhe . .	1,512	2,210	Gov. of Perm	2,943	
» Volhynia	389	561	» Ekaterinburg	3,085	
» Donetz	826	1,756	» Tiumen	1,062	
» Ekaterinoslav . .	1,710	3,687	» Cheliabinsk	494	
» Kiev	576	870	Rep. of Bachkir	1,546	
» Kremenchug . .	1,421	2,174	Gov. of Ufa	520	
» Nicolaiev	1,540	1,539	<i>Kirghiz Republic.</i>	456	
» Odessa	3,778	3,244	<i>Turkestan Republic. . . .</i>	232	
» Podolia	459	848	<i>Siberia</i>	541	
» Poltava	2,624	2,984			
» Kharkov	1,031	1,532			
» Chernigov	1,309	1,345			
			Total	1,084	

The mortality from typhus and relapsing fever can be given for only a few of the European countries. Unfortunately, mortality data are entirely lacking for Russia. In general, as may be seen in Tables 4 and 5, the mortality rates for the countries for which data are at hand corroborate the differences in prevalence that the incidence rates, based upon notifications, have already indicated.

TABLE 4.

NUMBER OF CASES AND DEATHS FROM TYPHUS REPORTED IN CERTAIN EUROPEAN COUNTRIES DURING 1921 AND 1922.

Country.	Number of				Indicated rate per 100,000.			
	Cases:		Deaths:		Cases:		Deaths:	
	1921	1922	1921	1922	1921	1922	1921	1922
Albania	81	23	10	4	1.3	0.36	0.16	0.06
Austria	874	488	99	68	18.	10.	2.	1.4
Czechoslovakia	948	417	99	34	7.	3.1	0.73	0.25
Egypt	71	17	0	3	0.91	0.2	0	0.04
Greece	44,835	40,792	4,023	3,039	166.	152.	15.	11.
Romania	7,532	3,782	886	448	46.	23.3	5.3	2.8
Yugoslavia (of the Serbs, Croatians and Slovenes)	1,139	232	9	26	9.5	1.9	0	0.22
Constantinople (Constanti- nople)	204	238	5	19	16.	18.	0.38	1.5

TABLE 5.

NUMBER OF CASES AND DEATHS FROM RELAPSING FEVER REPORTED IN CERTAIN EUROPEAN COUNTRIES IN 1921 AND 1922.

Country.	Number of				Indicated rate per 100,000.			
	Cases:		Deaths:		Cases:		Deaths:	
	1921	1922	1921	1922	1921	1922	1921	1922
Czechoslovakia	16	35	0	0	0.12	0.26	0	0
Romania	1,031	910	19	24	41.	36.	0.76	0.96
Ukraine	14,163	40,245	421	1,415	53.	150.	1.6	5.3
Romania	4,487	428	85	8	28.	2.6	0.52	0.05
Yugoslavia (of the Serbs, Croatians and Slovenes)	0	21	0	6	0	0.17	0	0.05
Constantinople (Constanti- nople)	155	1	0	0	12.	0.08	0	0

MAP 1.

DISTRIBUTION OF THE REPORTED INCIDENCE OF TYPHUS IN RUSSIA AND EASTERN EUROPE IN



MAP 2.

DISTRIBUTION OF THE REPORTED INCIDENCE OF RELAPSING FEVER IN RUSSIA AND EASTERN EUROPE
IN 1922.

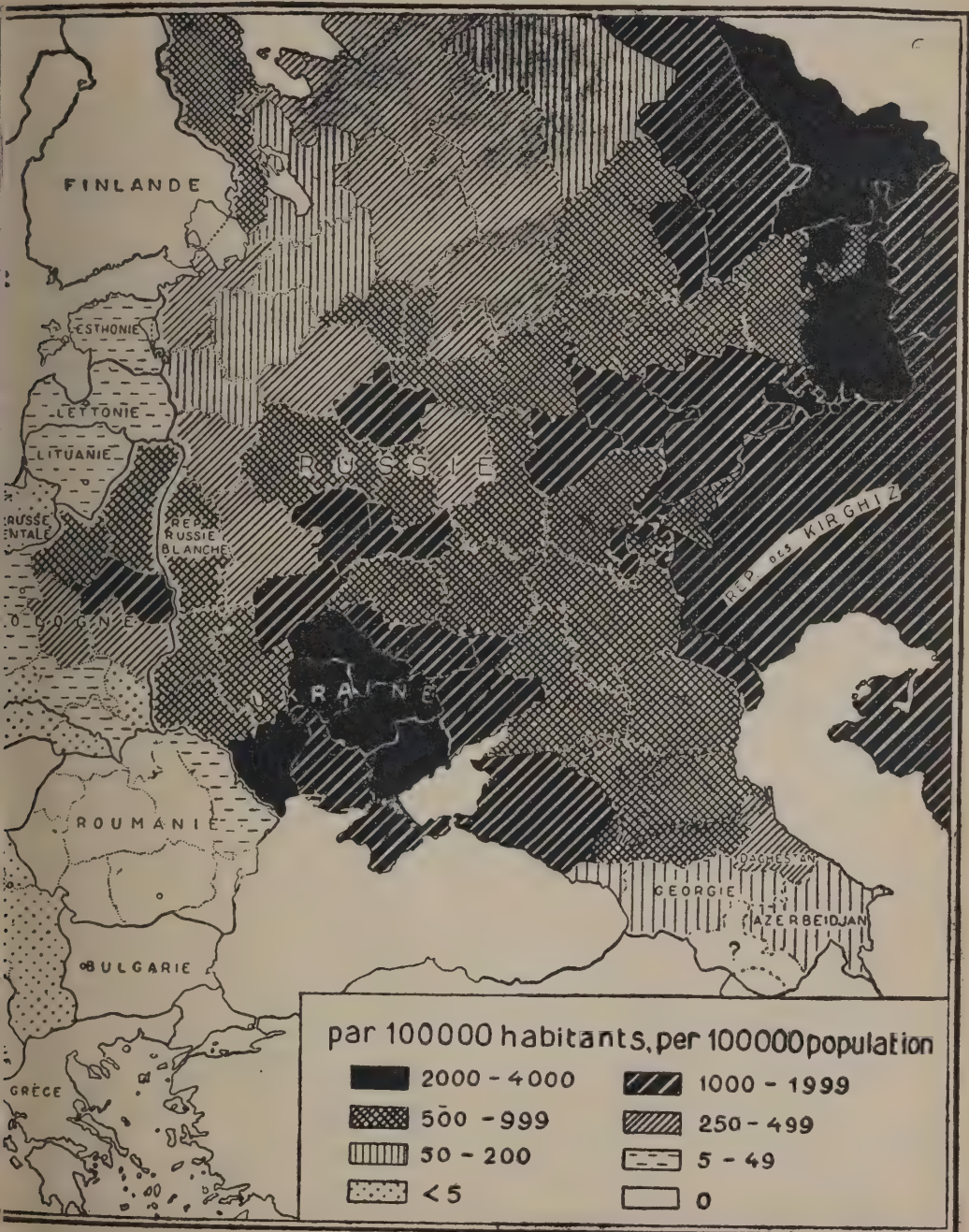


TABLE 6.

NUMBER OF CASES OF TYPHUS AND OF RELAPSING FEVER REPORTED IN THE SEVERAL DIVISIONS OF RUSSIA AND THE INDICATED RATES, 1920, 1921 AND 1922.

Typhus.

Division.	1920		1921		1922	
	Number of cases.	Rate per 100,000.	Number of cases.	Rate per 100,000.	Number of cases.	Rate per 100,000.
Western	219,010	2,402	82,677	907	52,203	10,441
Northern	52,847	1,226	16,170	375	31,807	8,146
Central	442,047	2,999	86,218	585	155,276	1,333
South Central	632,157	5,418	68,416	586	74,828	1,141
Ukraine	591,842	2,270	110,891	425	344,843	1,333
Crimea	(a)	—	5,333	700	14,314	1,831
Middle Volga	649,787	4,197	100,024	646	219,327	1,741
Southern	34,684	370	4,480	48	42,430	561
Transcaucasia	(a)	—	(a)	—	12,946	201
Eastern	289,750	2,363	65,592	535	230,353	1,741
Kirghiz Republic	26,598	526	4,326	86	23,087	561
Turkestan Republic	(a)	—	9,775	136	16,721	334
Siberia	347,574	4,302	34,241	424	43,722	441
Railways	195,789	—	40,919	—	142,596	—
Waterways	1,822	—	207	—	21,930	—
Prisons	5,282	—	2,956	—	5,012	—
Red Army	456,385	—	71,557	—	—	—
Total	3,945,574	2,651*	703,782	480*	1,431,395	1,141

Relapsing Fever.

Division.	1920		1921		1922	
	Number of cases.	Rate per 100,000.	Number of cases.	Rate per 100,000.	Number of cases.	Rate per 100,000.
Western	76,756	842	73,272	804	37,069	1,141
Northern	5,160	120	6,288	146	12,951	334
Central	102,831	698	55,718	378	97,450	661
South Central	344,288	2,951	102,480	878	109,328	991
Ukraine	326,075	1,251	247,089	948	467,893	771
Crimea	(a)	—	6,773	889	8,059	1,011
Middle Volga	131,176	847	65,804	425	160,851	1,011
Southern	23,818	254	13,839	148	79,425	811
Transcaucasia	(a)	—	(a)	—	8,088	101
Eastern	114,210	931	56,982	465	217,028	2,171
Kirghiz Republic	14,157	280	18,136	358	55,864	558
Turkestan Republic	(a)	—	16,197	225	17,429	174
Siberia	267,270	3,308	41,168	510	43,345	433
Railways	66,610	—	65,109	—	143,732	—
Waterways	521	—	173	—	10,938	—
Prisons	4,911	—	10,794	—	10,177	—
Red Army	700,323	—	240,915	—	(a)	—
Total	2,178,106	1,123*	1,020,737	593*	1,479,627	1,141

(a) No reports.

* Civil population only.

able 6, which is based on more complete figures for 1922 than those available for publication in previous issue of *Epidemiological Intelligence*, shows that the incidence of the two diseases was in almost every section of Russia in 1922 than in 1921. Their prevalence in 1922 did not, however, reach the proportions of the epidemic situation in 1920. The course of the diseases cannot adequately shown by summaries for calendar years, and in order to present a picture of their course as well as their seasonal occurrence, the less complete (so far as 1922 is concerned) data for the months¹ have been used in the two diagrams on page 18. It will be seen that the epidemic which caused such an increase in the incidence of the two diseases during 1922 began in 1921.

TABLE 7.

DISTRIBUTION OF CASES OF TYPHUS AND RELAPSING FEVER IN RUSSIA BY MONTHS,
FOR THE YEARS 1920—1922.

Months ² .	<i>Typhus</i> ³ .			<i>Relapsing Fever</i> ³ .		
	1920	1921	1922	1920	1921	1922
January	563,180	113,580	161,858	165,885	181,050	167,106
February	671,267	116,113	200,413	229,663	153,126	177,158
March	681,527	101,343	269,071	221,895	120,238	198,853
April	463,840	85,232	211,383	187,155	84,010	150,598
May	314,453	62,179	235,274	129,413	59,884	181,844
June	184,146	35,615	124,971	106,992	53,607	144,744
July	95,290	18,725	62,798	80,527	40,692	117,471
August	52,563	13,048	29,825	21,072	32,694	87,551
September	45,384	17,036	21,396	54,928	33,928	60,076
October	45,660	19,925	20,231	58,359	53,299	49,603
November	61,448	44,326	33,308	67,890	91,388	62,996
December	83,666	86,005	30,616	86,845	115,821	48,722
<i>Annual Rate per 100,000 Population.</i>						
January	4,462	1,125	1,603	1,314	997	1,655
February	6,648	1,150	1,985	2,275	978	1,755
March	6,750	1,004	2,132	2,198	808	1,576
April	3,675	675	2,094	1,483	518	1,492
May	3,114	616	1,864	1,282	510	1,441
June	1,824	353	1,238	1,060	455	1,434
July	755	148	622	638	289	1,163
August	521	129	236	209	293	694
September	360	135	212	435	250	595
October	452	197	200	578	458	491
November	609	351	264	672	571	499
December	663	852	303	688	1,018	483

The statistics as received are grouped into periods of four and five weeks. These differences have been taken into account before computing the rates used in the diagrams. The monthly figures are not for the calendar months, but are combinations of weekly data into periods of four and five weeks. The rates, however, are sufficiently comparable as differences in the lengths of the periods are taken into account. Cases are those occurring among the civil population only in 1920 and 1922, but include cases reported in the Red Army in 1921.

FIGURE 1.

MONTHLY INCIDENCE OF TYPHUS IN RUSSIA IN 1920, 1921 AND 1922.

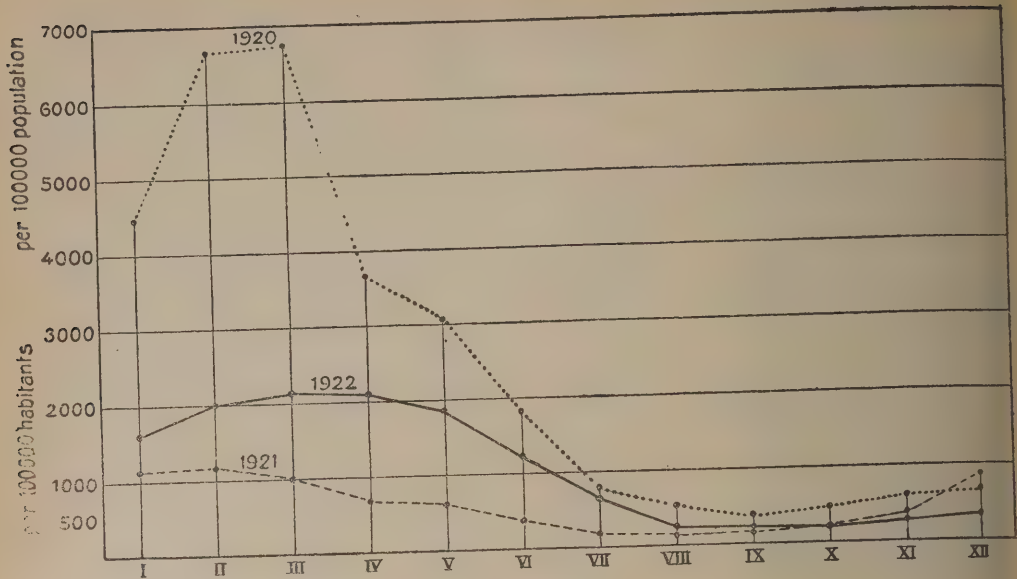
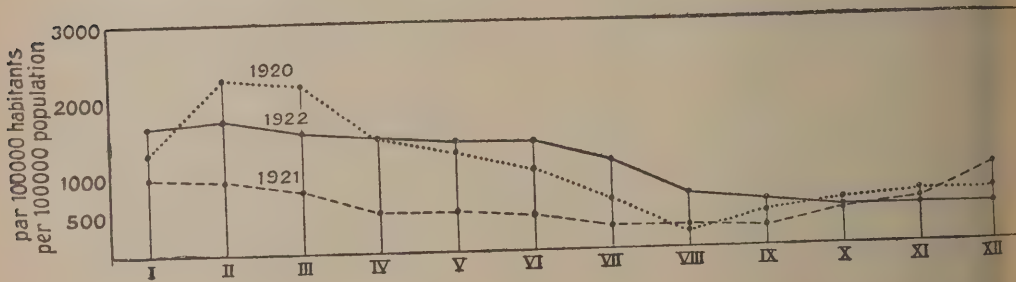


FIGURE 2.

MONTHLY INCIDENCE OF RELAPSING FEVER IN RUSSIA IN 1920, 1921 AND 1922.



Briefly summarising the general facts, it may be stated that among the principal factors in the renewed prevalence of the diseases in 1921-1922 were the following: (1) In Russia, the famines and its consequences, such as migration, malnutrition, overcrowding, insanitary conditions, and the (2) In countries bordering on the western and southern frontier of Russia, the immigration of large numbers of refugees under the most unfavorable conditions from Russia. This high prevalence continued during the first half of 1922, when a marked decline set in and has continued almost without interruption until the present date (July, 1923). The only interruption to this decline during the year was a temporary increase in November, 1922, in the incidence of typhus; but relapsing fever, with the possible exception of the northern region, continued to decrease without a perceptible halt.

It may be of interest to add some information as regards particular districts which has become available since the last report was published.

The government of Ekaterinburg, bordering on the western boundary of Siberia, was one of the affected not only in 1922 but during previous years of high prevalence, as the following table shows:

TABLE 8.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN THE GOVERNMENT OF EKATERINBURG, 1920—1922.

Disease.	Number of cases notified.			Rate per 100,000.		
	1920	1921	1922	1920	1921	1922
Typhus	87,618	12,908	62,382	4,450	650	3,170
Relapsing fever	40,397	21,349	60,592	2,050	1,080	3,080
Undetermined typhus	9,899	6,268	19,125	500	50	31

The average annual rates based on cases notified during 1898–1912 in this government were 100,000 for typhus, 65 for relapsing fever, and 97 for undetermined typhus.

Another example may be given from the Ukraine, in the government of Ekaterinoslav, which suffered severely from civil war and famine. The data for this government are more complete than for other governments because in the city of Ekaterinoslav the epidemic situation was examined with particular care and hospital statistics, which are especially difficult to obtain, are available for comparison.

The following vital statistics for the government of Ekaterinoslav in 1922 are compiled from reports presented to the Conference of Sanitary Officers in that government in March, 1923, and show the general condition in this part of the Ukraine.

TABLE 9.

BIRTHS AND DEATHS IN THE VARIOUS DISTRICTS OF THE GOVERNMENT OF EKATERINOSLAV, THE UKRAINE, 1922.

District.	Births.	Deaths.	Excess of deaths over births.
Dneprovsk	12,000	16,645	4,645
Ekaterinoslav		no information	
Cherkassk	7,127	17,275	10,148
Medvedevsk	19.6/1000	42.8/1000	23.2/1000
Cherkassk	3,663	5,892	2,229
Ekaterinoslav	3,629	9,971	6,342
Cherkassk		no information	
Cherkassk		no information	

During first seven months.

The occurrence of typhus and relapsing fever epidemics in the government of Ekaterinoslav is shown in the following table:

TABLE 10.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN THE GOVERNMENT OF EKATERINOSLAV
IN 1920-1922, BY MONTHS.

Months	<i>Typhus.</i>			<i>Relapsing Fever.</i>	
	1920	1921	1922	1920	1921
January	4,451	548	1,702	2,692	2,502
February.	29,405	677	2,485	17,686	2,650
March	17,531	610	3,381	10,439	1,864
April	8,485	479	4,109	5,054	1,626
May	7,747	619	5,247	6,837	2,297
June.	3,876	262	3,519	7,185	1,681
July	1,396	191	1,604	4,240	1,191
August.	686	119	735	4,546	1,076
September	462	74	398	1,940	1,118
October	270	75	355	1,467	733
November	309	112	449	1,712	826
December	175	409	520	1,073	1,383
Period not stated	—	2,343	—	—	7,820
Total	74,793	6,518	24,510	64,871	26,772

The monthly figures are fairly typical. It will be noted that in 1920 the epidemic reached its height in February in an acute peak, but remained on a comparatively low level during the rest of 1921, the curve assuming an entirely different shape from that of the preceding year. In the autumn a definite rise was manifested which continued without interruption until May, 1922, suggesting the influence of an unusual condition which, in fact, was the cumulative effects of the famines of 1920 and 1921.

The statistics from the hospitals in the city of Ekaterinoslav are of unusual interest because they afford data on the fatality of the diseases. They are reproduced in the following tables:

TABLE 11.

CASE FATALITY OF TYPHUS AND RELAPSING FEVER AMONG PERSONS ADMITTED FOR THESE DISEASES
TO THE HOSPITALS OF THE CITY OF EKATERINOSLAV, 1920, 1921, 1922.

	Year.	Number of admissions.	Number of deaths.	Fatality per 100 cases.
<i>Typhus:</i>	1920	5,268	389	7.4
	1921	971	64	7.0
	1922	2,250	262	11.6
<i>Relapsing fever:</i>	1920	2,806	91	2.8
	1921	2,411	145	5.2
	1922	3,845	544	15.6

The increase in the case fatality of the hospital cases is to be noted.

Mortality statistics are available for only a few localities. In the government of Stavropol a case fatality of 15 per cent for typhus and of 11 per cent for relapsing fever is shown during the period 1921-1922. In the government of Tcheliabinsk, a case fatality of 7.2 per cent for typhus and 4.4 for relapsing fever is indicated for 1921, and of 5.7 per cent for typhus and 8.8 per cent for relapsing fever in 1922.

A house-to-house canvass for the incidence of typhus and relapsing fever was made by the Ekaterinoslav sanitary epidemiological division which showed that of a total of 125,000 persons surveyed at the time of the canvass, 30,163 had been attacked by typhus and 26,300 by relapsing fever or 24 and 21 per cent respectively. The figures for Amur-Nijnedeprovsk, a suburb of Ekaterinoslav, were even higher, being 36 and 33 per cent respectively. These canvass records were compared with the records of notifications for the year 1921 and it appeared that the incidence as disclosed by the canvass was 4.3 times as great as that indicated by the notifications for typhus, and 2.5 times as great as in the case of relapsing fever. The age distribution of the cases recorded by the survey for the two diseases was as follows:

TABLE 12.

DISTRIBUTION OF CASES OF TYPHUS AND OF RELAPSING FEVER RECORDED IN A SURVEY OF THE CITY OF EKATERINOSLAV.

Age Group.	Number of cases.		Percentage.	
	Typhus.	Relapsing fever.	Typhus.	Relapsing fever.
All ages	29,731	25,686	100.0	100.0
Under 16	8,723	8,368	29.3	32.6
17-40	16,088	12,707	54.1	49.5
41-50	2,997	2,622	10.1	10.2
51-65	477	474	1.6	1.8

Unfortunately the age distribution of the population is not available, so that the rates cannot be computed. The similarity of the age distributions for the two diseases is very marked. For the city of Petrograd the distribution according to sex of cases of typhus and relapsing fever and the indicated rates have been supplied as follows:

TABLE 13.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN THE CITY OF PETROGRAD, 1920-1922, ACCORDING TO SEX.

<i>Typhus:</i>					
Year	Number of cases		Rate per 100,000		
	Males	Females	Males	Females	
1920	8,471	10,418	2,469	2,531	
1921	1,909	1,480	556	396	
1922	3,064	3,574	893	868	
<i>Relapsing fever:</i>					
1920	5,944	1,015	1,732	247	
1921	2,488	1,247	725	303	
1922	1,591	1,400	464	340	

The epidemic wave of 1921-1922 spread to a large extent along the railway lines, among the moving masses of emigrants from the famine area and those repatriated. It is unfortunately not possible to give precise figures of this exodus of the population. The movement comprised an evacuation from the famine area and an organised repatriation as well as an uncontrolled migration which greatly exceeded the organised. It is estimated that hundreds of thousands were moving; the organised emigration to Poland amounted to 700,000 in round figures, during the eighteen months ending November 1st, 1922. The Ukrainian evacuation Committee sent off 130,412 persons during the first six months of 1922, of which 60,729 were repatriated persons and 69,683 famine emigrants. The number of cases of infectious diseases notified on railways amounted in 1922 to 142,596 cases of typhus, 143,732 cases of relapsing fever as against 40,910 cases of typhus and 65,109 cases of relapsing fever reported in 1921.

An idea of the gravity of the sanitary problems arising out of this situation on the railways may be gathered from the following table.

TABLE 14.

NUMBER OF SICK PERSONS AND DEAD BODIES REMOVED FROM TRAINS IN THE SOUTHERN DIVISION OF THE UKRAINIAN RAILWAYS DURING THE PERIOD JANUARY 1ST-AUGUST 1ST, 1922¹.

Disease	Emigrants	Passengers
Typhus	917	754
Relapsing fever	3,713	2,997
Enteric fever	349	193
Undetermined typhus	8,865	4,242
Total of fever cases	13,844	8,186
Cholera	48	136
Total infectious cases	15,543	10,340
Non-infectious cases	2,342	4,081
Total of sick persons removed	17,885	14,421
Dead bodies removed	—	—

Only one case of typhus was reported in Finland during 1922, occurring in Helsingfors in January in a Russian courier arriving from Moscow. Similarly only one case of relapsing fever was notified occurring in August in the Mohle medical district, province of Viborg (Viipuri). The course of the two diseases during the past eight years is indicated by the following statistics:

TABLE 15.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN FINLAND DURING THE YEARS 1915-1922.

Disease	1915	1916	1917	1918	1919	1920	1921
Typhus	103	63	46	31	129	1	32
Relapsing fever	—	3	—	223	129	8	2

In Esthonia the two diseases occurred chiefly among persons who had exercised their right of option and left Russia in order to take up their abode in Esthonia. The epidemic of 1922

¹ Abstracted from an article by Dr. Marzeest, Chief of the Sanitary Epidemiological Division of the Public Health Commissariat of the Ukraine, published in the journal "Profilacticheskaja Medicina", No. 2-3, page 27.

ically confined to the city of Narva, close to the Russian frontier, where quarantine stations were operating. Out of the total of 163 typhus cases and 119 relapsing fever cases, 140 and 83 respectively were reported in that city.

The typhus epidemic was at its height in Latvia during the period January-June, when 1,313 cases were reported, after which it declined rapidly.

TABLE 16.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN LATVIA DURING 1920, 1921 AND 1922.

Disease	Number of cases notified			Indicated rates per 100,000		
	1920	1921	1922	1920	1921	1922
Typhus	4,631	1,288	1,480	250	79	91
Relapsing fever	547	275	116	30	17	7.1

The course of the two diseases in Lithuania during the past three years was as follows:

TABLE 17.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN LITHUANIA DURING 1920, 1921 AND 1922.

Disease	Number of cases notified			Indicated rates per 100,000		
	1920	1921	1922	1920	1921	1922
Typhus	5,320	3,004	3,409	197	120	136
Relapsing fever	732	1,031	910	27	41	36

Three cases of typhus were reported in Danzig in 1922 among immigrants coming from Poland. The number of cases of and deaths from typhus and relapsing fever notified in Poland from 1919 to 1922 is shown in the table below.

TABLE 18.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN POLAND IN 1919-1922.

Number of Cases and Deaths.

Disease	1919		1920		1921		1922	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Typhus	231,148	19,891	157,612	22,565	44,835	4,023	40,792	3,039
Relapsing fever	3,276	153	7,079	263	14,163	414	40,245	1,415

Indicated Rates per 100,000.

Disease	1919		1920		1921		1922	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Typhus	862	74	588	84	167	15	152	11
Relapsing fever	12	0.6	26	0.98	53	1.5	150	5.3

It will be remembered that the typhus epidemic in Poland resulting from the Great War and the evacuation of population reached its climax in 1919 when 231,148 cases were reported. In the following year the number of cases reported dropped to 157,612 and the decline in incidence continued through 1921 until the epidemic wave of 1921—1922 set in. This epidemic wave was confined to the eastern

section of the country. During the winter of 1921—1922 the repatriation of more than 578 persons was carried out under extremely unfavourable conditions, swelling the total population which crossed the Polish frontier during the period November 1st, 1921—June 30th, 1922, to 4,116. During the summer of 1922, with the improvement in the repatriation situation and the gradual cessation of this movement, the epidemic declined and has since remained on a relatively very low level.

The following table will illustrate the sanitary situation in Poland in 1922 with regard to the diseases and the repatriation problem.

TABLE 19.

REPORTED INCIDENCE OF TYPHUS AND RELAPSING FEVER IN POLAND IN 1922 BY ADMINISTRATIVE DIVISIONS AND PERCENTAGES OF REPATRIATIONS TO TOTAL POPULATION.

District	Reported incidence per 100,000		Percentage of refugees to total population
	Typhus	Relapsing fever	
City of Warsaw	109	22	1.03
Dist. of Warsaw	59	1.6	
» Lodz	37	0.8	0.15
» Kielce	55	5.3	0.29
» Lublin	323	370	2.8
» Bialystok	491	572	9.2
» Nowogrodek	529	534	8.0
» Polesie	677	1,488	13.5
» Volhynia	308	324	4.2
» Posen	2.0	0.55	0.013
» Pomerania	4.9	0.5	0.006
» Cracow	29	2.6	0.09
» Lwow	71	8.6	0.48
» Stanislawow	120	8.5	0.11
» Tarnopol	71	3.7	0.20
» Silesia	0.35	—	0.044
» Wilno	131	160	2.6

The above table seems to make it clear that a definite association existed between the incidence of typhus and relapsing fever and the extent of repatriation. The district of Polesia with the highest incidence rate of 677 of typhus and 1,488 relapsing fever per 100,000 is the district where the repatriates form 13.5 per cent of total population. The same is the case in the district of Bialystok and Nowogrodek, which returned a high incidence rate and where the refugees form 9.2 and 8 per cent of inhabitants.

It must, however, be emphasised that an epidemic depends upon many factors and the freedom from typhus and relapsing fever which the western section of Poland enjoys is due not only to the small number of refugees but also to other conditions. The general sanitary standard of the population, which is high in the western districts and comparatively low in the eastern marches, must be taken into account as a factor.

Out of the total of 417 cases of typhus notified in Czechoslovakia during 1922, 336 were repatriates from Slovakia and Carpathian Russia.

Typhus has exhibited a marked decline in the Kingdom of the Serbs, Croats and Slovenes. In 1920, 1,426 cases were reported, 1,139 in 1921 and 226 in 1922.

he situation remained quite satisfactory with regard to typhus in Constantinople and became only in January, 1923, when numerous refugees were transferred from Anatolian ports. The nce of typhus in 1922 (238 cases reported) was less than in any previous year since 1916. he distribution of the reported cases of typhus and relapsing fever in Roumania in 1922 was as s:—

TABLE 20.

DISTRIBUTION BY PROVINCES OF CASES OF AND DEATHS FROM TYPHUS AND RELAPSING FEVER IN ROUMANIA IN 1922.

Province	Number reported of:		Indicated rate per 100,000 for:	
	Cases	Deaths	Cases	Deaths
<i>Typhus.</i>				
Total.	3,782	448	233	2.8
Bucovina.	476	57	59	7.0
Old Kingdom.	1,216	147	15	1.9
Ardeal.	154	79	3	1.5
Bessarabia.	1,936	165	83	7.0
<i>Relapsing Fever.</i>				
Total.	428	8	2.6	0.05
Bessarabia.	428	8	18.3	0.34

will be seen that these diseases were most prevalent in Bessarabia (formerly a part of Southern). The total number of cases of relapsing fever reported in Roumania in 1922 was returned from abia, and out of a total of 3,782 cases of typhus notified during this period 1,936 were registered part of the Kingdom. Their prevalence continued to decline, as will be seen from the figures below:

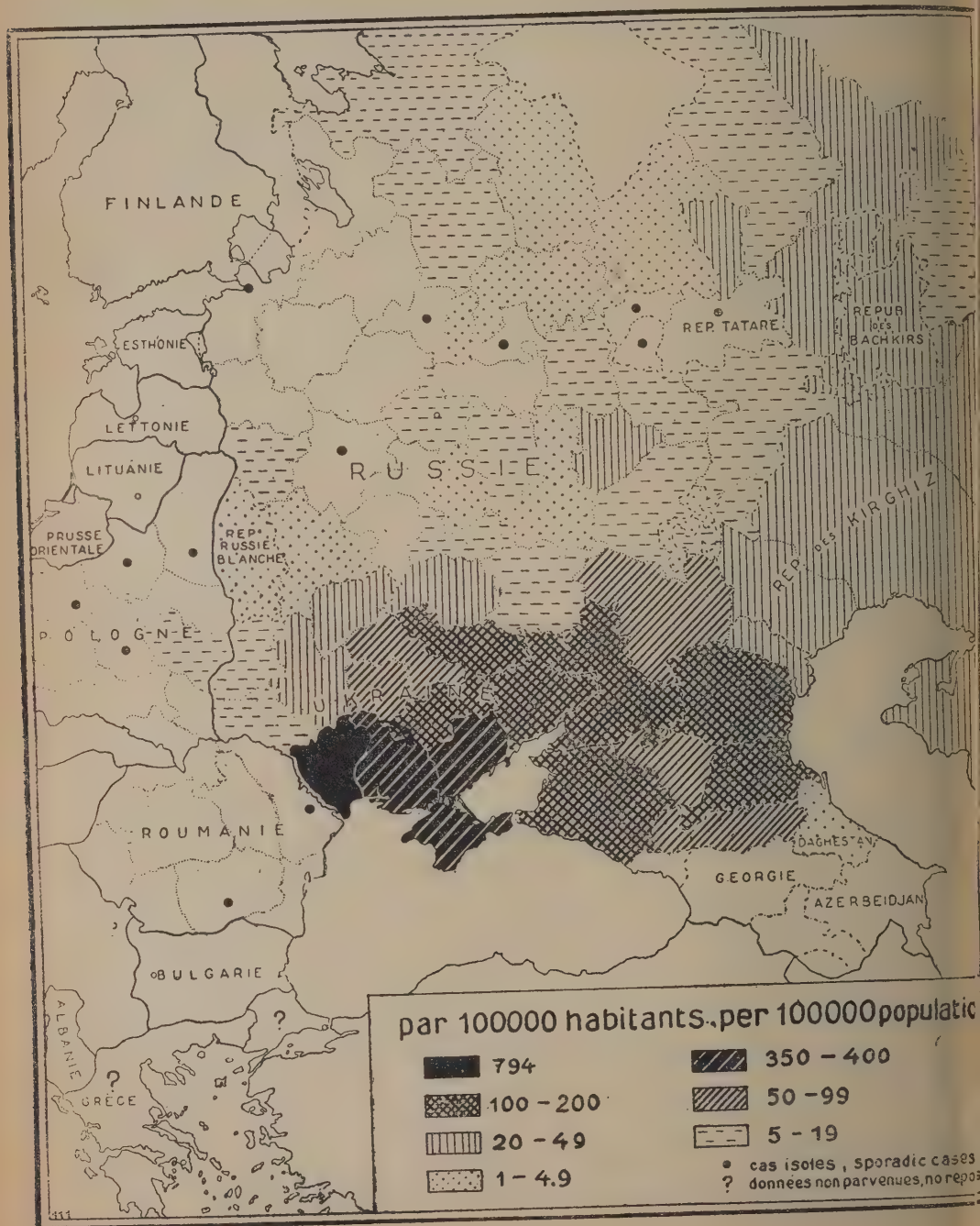
TABLE 21.

NUMBER OF CASES OF TYPHUS AND RELAPSING FEVER NOTIFIED IN ROUMANIA, 1920—1922.

Disease	1920	1921	1922
Typhus.	38,313	7,532	3,782
Relapsing fever.	20,306	4,487	488

MAP 3.

DISTRIBUTION OF THE REPORTED INCIDENCE OF CHOLERA IN RUSSIA AND EASTERN EUROPE IN 19



CHOLERA.

Cases of cholera were reported from Russia, where the disease was widespread, and from Poland and Roumania.

There has been a seasonal revival of cholera in Russia every year since the epidemic of 1904, like previous epidemics, is stated to have been imported from Persia. Two principal epidemics seem to have occurred between 1904 and 1922: (1) from 1904—1912; and (2) from 1913 up to the present date, with a smaller wave from 1913—1916 in between the two larger waves. The crest of the first wave was reached in 1910, in which year 230,232 cases were reported, resulting in 109,560 deaths, the disease having spread to 72 governments and districts. In 1912 cholera seemed to have subsided, only 9 cases being notified. In 1913 it began to spread again, but in the period 1913—1915 the number of cases at their highest in 1915 reached the much smaller total of 66,455, though 72 governments and districts were affected.

The crest of the second large wave occurred in 1921 when 207,389 cases were registered. The annual number of cases (and of deaths up to 1915) are shown in the following table:

TABLE 22.

NUMBER OF CASES OF CHOLERA NOTIFIED IN RUSSIA, 1904—1922, AND OF DEATHS FROM CHOLERA, 1903—1914.

	Number of governments and provinces affected	Civil Population		Troops		Total	
		Cases	Deaths	Cases	Deaths	Cases	Deaths
.....	13	9,226	6,850	—	—	9,226	6,850
.....	8	598	286	—	—	598	286
.....	—	20	—	—	—	20	—
.....	50	12,073	6,244	—	—	12,703	6,244
.....	69	30,705	15,542	—	—	30,705	15,542
.....	50	22,858	10,677	—	—	22,858	10,677
.....	72	230,232	109,560	—	—	230,232	109,560
.....	29	3,416	1,646	—	—	3,416	1,646
.....	2	9	—	—	—	9	—
.....	7	324	149	—	—	324	149
.....	15	1,800	761	7,915	—	9,715	—
.....	66	44,400	—	22,055	—	66,455	—
.....	17	559	—	1,241	—	1,800	—
.....	10	130	—	—	—	130	—
.....	37	41,247	—	339	—	41,586	—
.....	33	4,190	—	929	—	5,119	—
.....	50	25,711	—	3,904	—	29,615	—
.....	86	202,948	—	4,441	—	207,389	—
.....	77	97,412	—	—	—	97,412	—

The distribution of cholera in 1921 shows that the areas most heavily affected were the southern and eastern territories where the rates per 100,000 were as follows: government of Astrakhan, 1,512; Bashkir Republic, 1,071; government of Ufa, 883; government of Tcheliabinsk, 739; government of Tzaritzyn, 442. The epidemic followed the famine-stricken population extending as far as Siberia. The incidence of cholera in the western parts of Russia was relatively low.

In reviewing the experiences recently gained of cholera in Russia special attention is drawn to three main points:

1. The occurrence of winter outbreaks.
2. The dissemination of cholera over large territories as coincident with a low intensity epidemic.
3. The sudden drop of the epidemic in the midsummer of 1921 and 1922.

The occurrence of winter outbreaks became noticeable in 1919 in which year the highest mortality incidence was reported in December. During the winter 1920—1921, cases of cholera were constantly notified in the south in the province of Rostov and in the Kuban Territory. The disease reappeared in December of 1921—1922 in the Ukraine. In spite of the severity of the winter, cholera spread in January and February, 1922, into many widely separated localities in the Ukraine and into Central Russia, the Don area, Turkestan and Siberia. According to official returns, 97,412 cases of cholera were notified in 1922, and an additional 5,034 suspected cases. The geographical distribution of cases was as follows:—

TABLE 23.

REPORTED INCIDENCE OF CHOLERA IN VARIOUS DISTRICTS OF RUSSIA IN 1922.

District	Number of cases	Indicated Rate per 100,000
European Russia, without Ukraine and the Crimea, etc.	16,888	22
Ukraine	42,462	163
Crimea	2,835	372
Transcaucasus ¹	424	20
Siberia	23,200	287
Kirghiz Republic	2,253	45
Turkestan	2,607	36
Railways	4,784	—
Waterways	595	—
Prisons	25	—
Red Army	1,339	—

The highest incidence was reported in June and July and was followed by an abrupt drop in August. This sharp drop, as well as the drop in the cholera epidemic of 1921, remains unexplained.

¹ Azerbeidjan only.

gh various hypotheses were advanced. The monthly incidence during 1920, 1921, and 1922 is y in Table 24 and Figure 3.

FIGURE 3.

MONTHLY INCIDENCE OF CHOLERA IN RUSSIA IN 1920, 1921, AND 1922.

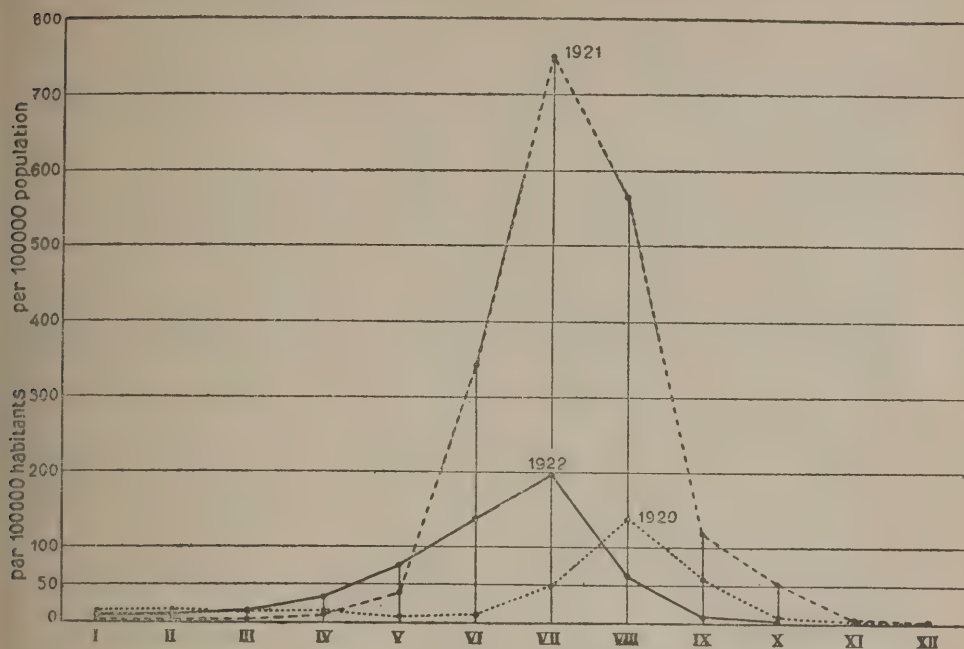


TABLE 24.

MONTHLY INCIDENCE OF CHOLERA IN RUSSIA, 1920—1922.

Months ¹	Number of cases		
	1920	1921	1922
January	733	135	565
February	831	99	475
March	1,281	222	1,831
April	1,192	900	3,088
May	686	3,566	9,012
June	970	32,996	13,189
July	5,159	90,512	18,934
August	14,207	54,149	7,793
September	6,048	14,367	629
October	785	5,203	108
November	203	502	15
December	148	508	4

The monthly figures are not for the calendar months, but are combinations of weekly data into periods of ad five weeks. The rates, however, are comparable, as they are all on an annual basis after taking into it difference in the lengths of the periods. The monthly data are not as complete as the annual totals.

TABLE 24 (continued).

Annual Rate per 100,000 Population.

Months	1920	1921	1922
January	6.3	1.4	6.0
February	8.9	1.1	5.1
March	13.7	2.4	15.7
April	10.2	7.7	33
May	7.3	38	77
June	10.2	352	141
July	45	774	202
August	152	578	67
September	52	123	6.7
October	8.4	55	1.2
November	2.2	4.3	0.13
December	1.3	5.4	0.04

While cholera was present in 1922 throughout the whole of the Russian Socialist Federative Soviet Republic, cases being reported from 77 governments and districts, only a few cases were notified in a large number of the governments. Almost fifty per cent of the cases were reported from the Ukraine where 42,462 cases were returned, giving a rate of 163 per 100,000 population. Cases were reported in all the twelve governments of the Ukraine and in more than 600 different localities. The existing centres in which cholera lingered throughout the winter, the moving masses of starving refugees, the impaired powers of resistance of the population due to famine are considered to have been of importance in determining the spread of the epidemic. The towns in the southern famine-stricken area were especially severely affected.

The spread of the disease was largely associated with carriers and with the existence of an alternative form of cholera in the famine-stricken area. It is reported that cholera vibrios were also found in river water. Cases of infection were frequently diagnosed among patients undergoing treatment for diseases due to famine and among typhus and relapsing fever patients suffering from diarrhoea. The district of Odessa was more severely affected than any other area, 15,191 cases of cholera having been notified, giving a rate of 795 per 100,000 population. The following table shows the cholera rates per 100,000 in each government of the Ukraine.

TABLE 25.

REPORTED INCIDENCE OF CHOLERA IN UKRAINE, 1921 AND 1922.

Governments	Indicated Rate per 100,000	
	1921	1922
Ukraine — Total	56	163
Volhynia	0.5	14
Podolia	0.8	15
Kief	11	47
Tchernigov	0.9	40
Kremenchug	25	83
Poltava	31	88
Kharkov	97	117
Odessa	95	795
Nikolaiev	57	355
Ekaterinoslav	107	171
Zaporozhe	42	389
Donetz	166	132

Cholera was also very prevalent along the shores of the Black Sea, in the Crimea, the Don area and the Northern Caucasus.

TABLE 26.

REPORTED INCIDENCE OF CHOLERA IN THE CRIMEA AND IN THE SOUTHERN REGION OF RUSSIA IN 1921 AND 1922.

Government or District	Indicated Rate per 100,000 population	
	1921	1922
Crimea	6	372
<i>Southern Region</i>	246	113
Tzaritzin	442	56
Astrakhan	1,512	286
Kalmuk Region	—	125
Don Region	124	167
Kubano-Tchernomorsk	158	145
Stavropol	172	51
Terek	400	146
Tcherkas and Kabardinsk	—	76
Gorskaja Republic	159	63
Daghestan	63	2.8
Caucasus-Azerbeidjan	63	20

In South-Central and Central Russia cholera appeared, but with a lower incidence, in all the provinces and districts with the possible exception of the governments of Vladimir and Kaluga, the highest rates being 29.3 and 39.9 cases per 100,000 population in the city of Moscow and the government of Kursk respectively.

TABLE 27.

REPORTED INCIDENCE OF CHOLERA IN THE SOUTH-CENTRAL AND CENTRAL REGIONS OF RUSSIA
IN 1921 AND 1922.

Government or district	Indicated rate per 100,000 population	
	1921	1922
<i>South-Central Region</i>	169	14
Gov. of Briansk	4.9	0.8
» Orel	134	6.1
» Tambov	120	3.7
» Voronège	354	11
» Kursk	100	40
<i>Central Region</i>	12	4.1
Gov. of Rybinsk	1.8	0.9
» Yaroslav	24	3.5
» Ivanovo-Vosnessiensk	28	0.3
» Vladimir	12	—
» Tver	0.4	0.2
» Smolensk	1.2	0.2
City of Moscow	14	29
Gov. of Kalouga	3.0	—
» Toula	18	1.3
» Riazan	18	8.9

In the Western and Northern Regions the annual incidence of cholera was 2.1 and 5.3 per 100,000 population respectively. In the City of Petrograd only one case was notified and was due to infection incurred in a laboratory. An outbreak of cholera was reported in September from Archangel and 10 cases were notified.

TABLE 28.

REPORTED INCIDENCE OF CHOLERA IN THE WESTERN AND NORTHERN REGIONS OF RUSSIA
IN 1921 AND 1922.

Government or region	Indicated rate per 100,000 population	
	1921	1922
<i>Western Region</i>	0.9	2.1
City of Petrograd	4.8	0.1
Gov. of Novgorod	0.3	—
» Pskov	0.2	—
» Vitebsk	1.8	9.4
Rep. of White Russia	0.1	1.0
Gov. of Gomel	0.4	1.9
<i>Northern Districts</i>	1.6	5.3
Gov. of Arkhangel	0.3	16
» Tcherepovetz	0.3	0.2
» Vologda	1.9	15
» Severodvinsk	—	1.7
» Kostroma	3.9	1.6

ough conditions in the Middle Volga area (famine, water-transport, the re-opening of the annual a Nijni-Novgorod) seemed to be peculiarly favourable for the spread of cholera on a wide scale, extensive outbreak did not occur. The cholera rate was 7.2 per 100,000 population, varying from the government of Penza to 0.3 in the Mariskaia Region.

TABLE 29.

REPORTED INCIDENCE OF CHOLERA IN THE MIDDLE VOLGA REGION IN 1921 AND 1922.

Government or district	Rate per 100,000 population	
	1921	1922
<i>Middle Volga Region</i>	211	7.2
Gov. of Nijni-Novgorod	50	5.2
» Mariskaia	38	0.3
Tchuvach Region	58	0.9
Tartar Republic	83	0.1
Gov. of Simbirsk	179	8.0
» Penza	23	23
» Saratov	282	11
» Samara	541	5.0
German Communities	335	1.1

the Eastern area, which was the theatre of an extensive epidemic in 1921, cholera continued prevalent in all governments in 1922 giving a rate of 21 per 100,000 for the area taken as a whole. The highest morbidity rate was 39 and the lowest 2.8 per 100,000 in the governments of Ekaterinburg and Perm respectively.

TABLE 30.

INDICATED INCIDENCE OF CHOLERA IN THE EASTERN REGION IN 1921 AND 1922.

Government or region	Rate per 100,000	
	1921	1922
<i>Eastern Region</i>	367	21
Government of Viatka	1.0	2.8
Votjak Terr.	11	28
Government of Perm	28	10
» » Ekaterinburg	72	39
» » Tiumen	151	37
» » Tcheliabinsk	739	10
Bashkir Republic	1,071	24
Government of Ufa	883	23

reported cholera morbidity rate for the Kirghiz Republic was 45 and that for the Turkestan 36 per 100,000.

It is known as yet of the epidemic of cholera in Siberia in 1922. The 23,200 cases which were reported during the first ten months of 1922 represent an incidence of 287 per 100,000. It is said that the epidemic followed the Transsiberian Railway line and was confined to the governments of Omsk, Tomsk, Kopalajewsk and Altajsk.

During the month of November 15 cases of cholera were reported in the Russian Socialist Federative Soviet Republic and four cases were returned in December from the Ukraine.

In Poland cases of cholera were notified in June, July and August giving a total of 121 with 34 deaths. Out of this total 88 cases were admitted to the State Epidemic Hospital of the quarantine station at Rovno, of which 17 proved fatal. Five cases with two deaths were reported from Baranowicze, the chief frontier reception point for the repatriation of refugees. The remaining cases were due to contact with these stations.

Eighteen cases of cholera were notified in July in Roumania, of which 12 were returned from Arabia and six from the Carangasi-Ilfov District. One case of cholera was registered in August in Bucarest.

No cases of cholera occurred in Constantinople, although carriers have been detected among persons arriving from infected ports.

Several carriers have been found among Russian refugees arriving in Greece, also clinics have been reported. No case developed after the refugees were freed from quarantine.

¹ Including one case of cholera in a laboratory in January.

SMALLPOX.

The areas in Europe where smallpox was most prevalent during 1922, as indicated by available data, were Russia, Switzerland and Spain. If the rates of incidence given in the table below and stated for Spain from the mortality from smallpox are shown on a shaded map, as has been done on page 36, it is clearly suggested that, in general, the disease attained its highest prevalence in the northern part of Russia and exhibited a diminishing degree of prevalence toward the western coast of Europe, with Switzerland, Spain, and possibly Great Britain standing out as exceptions. Data are lacking for Ireland, France, Portugal, Greece and Albania.

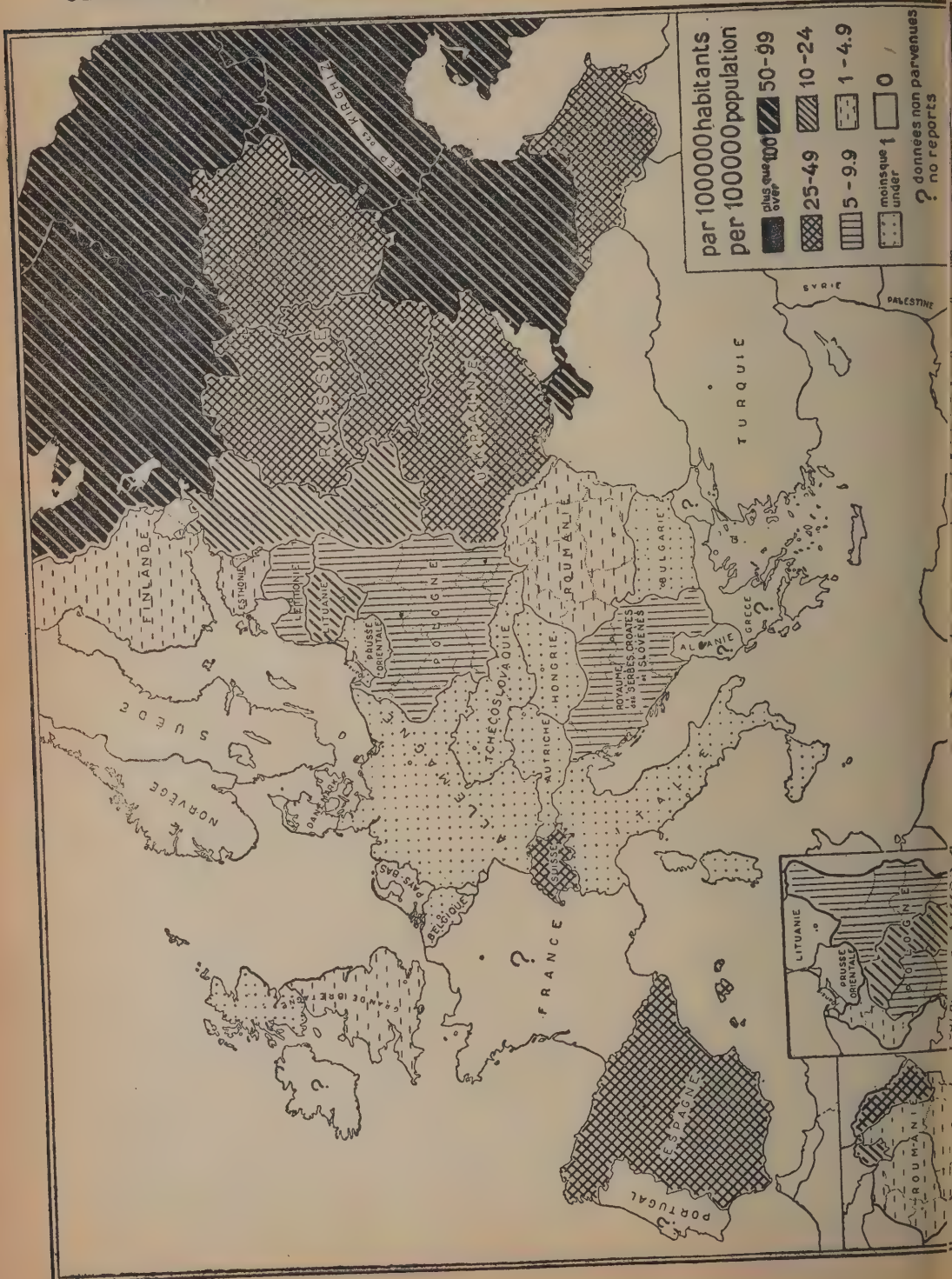
TABLE 31.

REPORTED INCIDENCE OF SMALLPOX IN EUROPEAN COUNTRIES DURING 1922.		
Country	Number of cases	Annual rate per 100,000
Austria	4	0.06
Belgium	24	0.31
Bulgaria	23	0.47
Czechoslovakia	84	0.62
England and Wales	1,013	2.7
Estonia	23	1.3
Finland	90	2.7
Germany	207	0.35
Hungary	2	0.03
Italy	234	0.60
Latvia	160	9.8
Lithuania	345	14.5
Poland	2,327	8.7
Roumania	788	4.8
Scotland	7	0.14
Kingdom of the Serbs, Croats and Slovenes	725	6
Switzerland	1153	30
Russia : Total ¹	58,057	44
Northern District	3,451	80
Western District	1,415	16
Ukraine	10,748	41
Crimea	744	98
Central District	5,048	34
South-Central District	4,201	36
Middle Volga District	6,595	43
Southern District	6,199	64
Eastern District	7,621	62
Kirghiz Republic	3,838	76
Turkestan Republic	987	14
Siberia	2,401	30
Transcaucasia	1,832	32

¹ Includes figures for waterways, railways and prisons.

MAP 4.

GEOGRAPHICAL DISTRIBUTION OF CASES OF SMALLPOX NOTIFIED IN EUROPE IN 1922.



No cases were reported in Danzig, Denmark, Netherlands, Norway and Sweden, in which countries the disease is notifiable.

Deaths from smallpox are reported currently from only nine of the countries enumerated in the following table and are summarised in the following table, in which are given, for comparison, the number of cases notified.

TABLE 32.

NUMBER OF CASES OF AND DEATHS FROM SMALLPOX REPORTED IN CERTAIN EUROPEAN COUNTRIES DURING 1922, AND RATES PER 100,000 POPULATION.

Country	Number reported of		Rate per 100,000 for	
	cases	deaths	cases	deaths
Austria	4	—	0.06	—
Bulgaria	23	2	0.47	0.04
Czechoslovakia	84	12	0.62	0.09
England and Wales ¹	483	21	2.54	0.11
Hungary	2	—	0.03	—
Lithuania	345	30	13.80	1.20
Poland	2,327	513	8.66	1.91
Roumania	788	150	4.80	0.92
Spain	*	1,185	*	5.68
Kingdom of the Serbs, Croats and Slovenes	725	166	6.03	1.38

The ratio of deaths to cases varies widely for the countries where both are reported; whether due principally to differences in the completeness of notification or to differences in the fatality of the disease it is impossible, of course, to say upon the basis of the facts before us.

The death rate from smallpox in Spain suggests, of course, a rather high incidence of the disease, if a very low ratio of deaths to cases is assumed. If the ratio for Poland of 1:4.5, for example, is assumed, there would be a total of about 5,380 cases, or an incidence rate of 26 per 100,000; or if the ratio for the 105 large towns of Great Britain can be assumed as a fair indication of the actual number of cases for each death, a total of 47,400 cases, or an incidence rate of 2,274 per 100,000 population is indicated. Further details regarding the prevalence of the disease in Spain are lacking at this

For the majority of countries for which monthly or weekly reports of cases are available and in which the disease was noticeably prevalent, the period of greatest incidence was in the first half of the year. In some countries the outbreaks of the disease were localised, and the chronology is not so well defined. The general course of the disease during the year in Europe as a whole, however, was a fairly well-defined wave, which reached its crest during the first six months, began to decline in July and June, and continued its downward trend, except in a few localities, during the remainder of the year.

¹Deaths are reported currently for 105 great towns only, and the number of cases and the morbidity and mortality rates in this table are for the same area.
Statistics of cases are not available.

TABLE 33.

REPORTED INCIDENCE OF SMALLPOX IN EUROPEAN COUNTRIES IN 1922, BY MONTHS¹.

Annual Rate per 100,000 in Specified Period.

Country	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.
Belgium	0.31	—	0.31	0.16	0.15	0.16	—	0.77	0.16	0.62	0.48
Bulgaria	—	1.3	—	—	0.24	—	—	—	0.50	2.2	0.75
Czechoslovakia . .	1.4	1.4	2.5	0.19	0.52	0.63	0.09	0.26	—	0.26	0.09
Esthonia	10.0	0.75	2.0	—	2.0	—	—	—	0.70	—	—
Finland	—	14.0	10.0	3.3	3.9	1.1	0.35	—	—	0.35	—
Hungary	0.30	—	—	—	—	—	—	—	—	—	—
Latvia	16.0	13.0	12.0	18.0	22.0	16.0	3.6	11.0	3.0	0.72	3.7
Lithuania	24.0	24.0	28.0	28.0	42.0	7.8	4.7	2.4	2.4	—	0.97
Roumania	7.2	15.0	12.0	9.1	5.1	4.3	2.6	0.80	0.67	0.36	0.97
Kingdom of the Serbs, Croats and Slovenes ² . .	5.2	5.1	8.9	9.3	8.1	6.3	3.5	2.7	2.1	4.9	6.5
Russia ²	32.0	72.0	65.0	88.0	63.0	77.0	44.0	23.0	17.0	11.0	13.0
Ukraine ²	58.0	78.0	63.0	64.0	63.0	47.0	36.0	13.0	14.0	19.0	16.0

Weekly Reports Combined into Thirteen Periods of Four Weeks.³

Country	Jan. 1-28	Jan.29 Feb.25	Feb.26 Mar. 25	Mar.26 Apr.22	Apr.23 May 20	May 21 Jun.17	Jun.18 Jy.15	Jy.16 Aug.12	Aug.13 Spt.9	Spt.10 Oct.7	Oct.8 Nov.4	Nov.5 Dec.2
Austria . .	—	—	—	0.20	—	—	—	—	—	—	0.61	—
England and Wales . .	1.8	2.1	1.8	3.9	3.8	2.9	2.1	2.2	1.8	3.0	4.0	2.8
Germany . .	0.04	0.13	0.02	1.8	1.7	0.31	0.35	0.07	0.09	0.02	0.02	0.02
Italy. . . .	1.7	1.1	0.44	0.57	0.30	1.3	0.70	0.20	0.20	0.30	0.60	0.27
Poland . .	11.0	9.6	13.0	23.0	20.0	14.0	6.6	5.9	2.4	2.8	2.0	2.4
Switzerland	13.0	14.0	12.0	25.0	31.0	17.0	18.0	16.0	28.0	23.0	13.0	85.0

Although the incomplete notification of disease and the changes in population in some govern-
ment of Russia during the past five years render almost impossible a comparison of the incidence for
years, yet it is very evident that a marked decrease in the prevalence of smallpox occurred in 1922.
This is perhaps more clearly shown when the geographic divisions are considered separately.

¹ No cases were reported in Danzig, Denmark, the Netherlands, Norway, and Sweden, in which
tries the disease is notifiable.

² Monthly figures reported are combinations of weekly data, with four weeks in the months of Jan-
April, June, July, Sept., Oct., and Dec., and five weeks in March, May, Aug. and Nov.

³ For those countries for which summaries by calendar months are not available.

⁴ Information concerning the incidence of smallpox in Russia from 1900 to 1920 has been given
Report of Professor L. Tarassévitch in *Epidemiological Intelligence* No. 2, p. 34, and a chart showing the in-
rate from 1890 to 1920 has been given on page 48 of the same bulletin. Later reports give the number
of this disease in Russia in 1920 as 158,505 instead of 98,179 as given in the Tarassévitch report.

TABLE 34.

NUMBER OF CASES OF SMALLPOX NOTIFIED IN RUSSIA DURING 1918-1922, BY YEARS AND BY DIVISIONS.¹

Division	1918	1919	1920	1921	1922
Western	8,126	33,929	14,697	3,099	1,415
Northern	10,651	14,061	9,135	6,452	3,451
Central.	20,628	71,780	28,312	13,381	5,048
South-Central	6,448	20,618	28,089	16,047	4,201
Ukraine	—	—	34,730	28,123	10,748
Southern	—	—	—	—	6,199
Crimea	—	—	—	1,586	744
Middle Volga	4,661	18,905	19,259	9,233	6,595
Eastern	2,105	2,766	11,046	8,934	7,621
Kirghiz Republic	185	805	—	886	3,838
Turkestan Republic	—	—	—	1,063	987
Siberia	—	—	—	—	2,401
Transcaucasia.	—	—	—	—	1,832

of the various governments, provinces, and other subdivisions of the larger divisions shown in foregoing table are studied in detail (see Annex II, Table 4), it appears that the general indications given by the summary table above are substantiated, namely, that where figures are available for the years, a decline in the prevalence of the disease appears to have been in progress since 1920. The incidence rate for 1922 for each of the geographic divisions is compared with 1921 in the following table:

TABLE 35.

REPORTED INCIDENCE RATES FOR SMALLPOX IN RUSSIA IN 1921 AND 1922, BY DIVISIONS.

Division	Rate per 100,000	
	1921	1922
Western	34	16
Northern	150	80
Central.	91	34
South-Central	138	36
Ukraine	108	45
Southern	30 ²	64
Crimea	208	98
Middle Volga	64	43
Eastern	73	62
Kirghiz Republic	18	76
Turkestan Republic	15	14
Siberia	—	30
Transcaucasia.	—	32

The blank spaces indicate only that no reports have been received from the various governments, provinces and other subdivisions of the divisions for the years specified. The data should be regarded, therefore, as partly incomplete, especially during 1918 and 1919.

¹ Including returns for only three of eight governments. For these three governments alone the indicated rate for 1921 was 77 per 100,000.

Keeping in mind the extreme unreliability of the returns, especially for certain sections of the foregoing statistics suggest that the incidence of smallpox in 1922 was lowest in the Western Division, there approximating the rates in the Central European countries which border on the Western Division; was approximately twice as high on an average in Central Russia and the Ukraine, reached its highest levels in the remainder of Russia to the north, east, and south of Central Russia. The situation is shown in the chart, page 36.

The indicated incidence rates and the death rates from smallpox for the various provinces of Poland are shown in the following table:

TABLE 36.

REPORTED INCIDENCE AND DEATH RATES FOR SMALLPOX IN POLAND DURING 1922,
BY ZONES AND BY PROVINCES.

Province	Indicated case rate per 100,000	Death rate per 100,000
All Poland	8.7	1.91
Eastern Zone	8.3	0.58
Bialystok	5.2	0.23
Nowogrodek	17.7	1.00
Polesia	5.9	0.09
Volhynia	8.3	0.33
Tarnopol	3.9	0.63
Vilna	8.6	0.04
East-Central Zone	11.5	3.86
Warsaw City	1.4	0.64
Warsaw District	3.6	0.19
Lublin	7.0	0.38
Lwow	0.7	0.26
Stanislawow	60.1	24.72
West-Central Zone	9.1	1.58
Lodz	8.1	1.60
Kielce	13.9	1.77
Cracow	4.1	1.31
Western Zone	2.1	0.27
Pomerania	0.7	0.11
Posen	1.0	0.15
Teschen ¹	40.0	4.82

Taking into consideration the size of the population, the areas of greatest prevalence were the provinces of Nowogrodek, Stanislawow, Kielce and Teschen. But, with the possible exception of the City of Warsaw and of the provinces of Lwow, Pomerania, and Posen, quite definite outbreaks occurred in various localities in all the sections of Poland. The localisation of these outbreaks and their generally synchronous occurrence are shown in the table below, which gives the distribution of notified cases by four-week periods in each of the provinces.

¹ The Teschen rate is for the population of the old Teschen district only, since the cases of smallpox occurred in the first half of the year before Silesia became a part of Poland and of Teschen Province.

TABLE 37.

SEASONAL DISTRIBUTION OF SMALLPOX IN POLAND IN 1922, CLASSIFIED BY DISTRICTS.

Cases reported in Specified Periods.

District	Year	Jan. 1-23.	Jan. 24. Feb. 25.	Feb. 26. Mar. 25.	Mar. 26. April 22.	April 23. May 20.	May 21. June 17.	June 18. July 15.	July 16. Aug. 12.	Aug. 13. Sept. 9.	Sept. 10. Oct. 7.	Oct. 8. Nov. 4.	Nov. 5. Dec. 2.	Dec. 3-30.
Łódź	67	7	5	10	19	9	3	9	0	0	1	2	2	0
Wrocław	229	0	12	8	79	63	48	8	8	2	0	1	0	0
Warsaw	51	11	2	0	5	5	21	5	2	0	0	0	0	0
Łódź	125	31	10	27	13	16	21	2	1	0	2	0	1	1
Łódź	56	5	10	6	1	20	10	3	0	0	0	1	0	0
Łódź	42	0	0	0	0	4	7	10	2	9	7	2	1	0
City	13	2	2	0	1	3	3	1	0	0	0	0	0	1
District	76	10	2	0	17	7	9	10	5	7	7	0	1	1
Łódź	146	9	23	5	15	33	25	10	9	3	0	1	5	8
Łódź	20	0	0	3	0	2	2	4	1	0	1	1	1	5
Łódź	802	42	77	112	182	146	87	43	60	9	16	2	17	9
Łódź	183	38	16	33	37	19	19	9	5	3	0	1	1	2
Łódź	351	47	32	32	69	57	8	11	23	12	13	25	19	3
Łódź	81	6	3	8	5	17	15	8	2	2	10	5	0	0
Łódź	7	0	1	1	2	1	2	0	0	0	0	0	0	0
Łódź	20	10	1	0	6	0	1	0	0	0	0	0	1	1
Łódź	58	1	1	16	17	14	0	3	3	3	0	0	0	0
Total	2,327	219	197	261	468	416	281	136	121	50	57	41	49	31

With the exception of the outbreaks which occurred in the district of Teschen and in the province of Łódź, the indicated incidence was generally higher in the eastern sections of Poland than in the western sections, and thus followed roughly the lines of the epidemiological "zones" into which, upon the basis of the incidence of certain other epidemic diseases, the country has been provisionally divided for administrative purposes.

While the reported incidence of the disease in Finland was higher in 1922 than in 1921, it kept below the general level which had prevailed since 1919 and was far below the rate which characterised the incidence of the war, as shown by the following summary by years from 1915 to 1922:

TABLE 38.

REPORTED INCIDENCE OF SMALLPOX IN FINLAND DURING THE PERIOD 1915-1922.

Year	Rate per 100,000
1915	5
1916	43
1917	33
1918	74
1919	52
1920	2.2
1921	0.7
1922	2.7

Of the 90 cases notified in 1922, 69 occurred in the province of Uleaborg. 85 cases were distributed among the provinces as follows:

TABLE 39.

REPORTED INCIDENCE OF SMALLPOX IN FINLAND IN 1922, BY PROVINCES.

Province	Number of cases notified	Indicated rate per 100,000
Uleaborg	69	19.
Vasa	10	2.7
Cuopio	4	1.0
Abo	1	0.27
St. Michaelis	1	0.27

The Uleaborg outbreak was confined to two medical districts, namely, the Kajana district with 30 cases and the Pudesjawi district with 39 cases. The epidemic started in February with 3 cases, continued through March, when 26 cases were reported, and came to an end in the Kajana district in April. A slight outbreak in the province of Vasa occurred in May and was limited to the K. medical district.

In Esthonia the incidence of smallpox was very much lower than in the previous year. An outbreak occurred in January, 15 of the total of 23 cases having been notified during that month. In 1921 a total of 126 cases were reported, 70 of which occurred in the eastern frontier of W.

In Roumania the disease had its highest incidence in the two provinces bordering on the Russian Empire, attaining epidemic proportions in the province of Bessarabia, where 661 cases were reported. The distribution of the cases according to provinces and the indicated rates in Roumania are as follows:

TABLE 40.

REPORTED MORBIDITY AND MORTALITY FROM SMALLPOX IN ROUMANIA DURING 1922, BY PROVINCES.

Provinces	Number of		Rate per 100,000 for	
	cases	deaths	cases	deaths
Old Kingdom	36	2	0.46	0.025
Ardeal	2	1	0.04	0.02
Bukovina	89	24	10.97	2.96
Bessarabia	661	123	28.19	5.25
Total	788	150	4.8	0.92

Bessarabia, it will be remembered, was formerly a part of Russia.

Smallpox in Switzerland attained a higher rate of incidence and was more widespread in 1922 than in 1921. During the four years prior to 1921 the disease had been practically non-existent, according to records of notifications, as the following yearly totals for the entire country indicate:

TABLE 41.

REPORTED INCIDENCE OF SMALLPOX IN SWITZERLAND DURING THE PERIOD 1917-1922.

Year	Number of cases notified	Rate per 100,000
1917	0	—
1918	2	0.05
1919	3	0.08
1920	2	0.05
1921	596	15.36
1922	1,153	29.72

The present wave of the disease began in the spring and early summer of 1921 in the Canton of Basle and the town of Basle, with scattered cases in three other localities, but it did not attain extremely high proportions until December, when an explosive outbreak occurred in the canton of Glarus and appeared in several localities in other cantons. The weekly returns for the two years have been arranged for convenience in 26 four-week intervals and are shown in the table below:

TABLE 42.

NUMBER OF CASES OF SMALLPOX NOTIFIED IN SWITZERLAND DURING 1921 AND 1922, BY FOUR-WEEK INTERVALS.

Four-week interval	1921	1922
I. January 1-28	0	40
II. January 29-February 25	0	43
III. February 26-March 25	5	37
IV. March 26-April 22 . .	4	73
V. April 23-May 20 . .	73	91
VI. May 21-June 17 . . .	48	52
VII. June 18-July 15 . . .	64	53
VIII. July 16-August 12 . .	25	49
IX. August 13-September 9	6	82
X. Sept. 10-Oct. 7 . . .	0	68
XI. Oct. 8-Nov. 4	0	40
XII. Nov. 5-Dec. 2	3	252
XIII. Dec. 3-Dec. 30 . . .	368	273
Total	596	1,153

The incidence according to cantons is compared for the two years in the following table

TABLE 43.

REPORTED INCIDENCE OF SMALLPOX IN SWITZERLAND IN 1921 AND 1922, BY CANTON

Canton	Case rate per 100,000		Canton	Case rate per 100,000	
	1921	1922		1921	1922
Zurich	33.8	105.3	Basle (canton)	1.2	30.8
Bern	—	59.3	St. Gall	2.7	—
Lucerne	—	7.9	Grisons	—	—
Schwyz	—	16.7	Aargau	6.7	11.1
Glarus	1,007.9	62.1	Thurgau	—	4.1
Zug	3.2	6.3	Tessen	—	—
Solothurn	0.8	—	Neuchatel	0.8	—
Basle (town)	31.3	2.1	Geneva	0.6	—

While no canton in 1922 experienced the extraordinarily high rate which the Canton of Glarus had in 1921, the indicated rate exceeded 10 per 100,000 in seven cantons in 1922 and the disease was reported in 13 cantons, as against 10 in 1921. In 11 cantons the rate was higher in 1922 than in the preceding year, while decreases occurred in only three cantons.

The movement of the disease during 1922 in the various cantons is shown in the following table, in which the cases are distributed according to four-week periods :

TABLE 44.

DISTRIBUTION OF CASES OF SMALLPOX AS NOTIFIED IN SWITZERLAND DURING 1922¹, BY CANTON AND BY FOUR-WEEK PERIODS.

Canton	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mr. 26 Ap. 22	Ap. 23 My. 20	May 21 Je. 17	Je. 18 Jy. 15	Jy. 16 Aug. 12	Aug. 13 Sep. 9	Sep. 10 Oct. 7	Oct. 8 Nov. 4
Zurich	10	22	25	49	42	26	42	28	61	38	21
Bern	—	1	—	10	29	16	1	5	19	17	16
Lucerne	—	12	—	—	—	—	2	—	—	—	—
Schwyz	3	3	—	—	3	—	—	—	—	—	—
Glarus	17	3	1	—	—	—	—	—	—	—	—
Zug	1	—	—	—	—	—	—	—	—	—	—
Basle (town)	—	—	—	—	2	1	—	—	—	—	—
Basle (canton)	—	—	—	—	—	—	—	—	—	4	—
St. Gall	5	2	7	8	3	—	—	—	1	2	—
Grisons	—	—	—	—	—	—	—	—	—	—	—
Aargau	4	—	4	5	4	2	—	1	—	—	1
Thurgau	—	—	—	1	8	7	8	14	—	5	2
Tessen	—	—	—	—	—	—	—	1	1	2	—
Total	40	43	37	73	91	52	53	49	82	68	40

While scattered cases occurred in several cantons, well-defined epidemics appeared in the cantons of Zurich, Bern, Lucerne, St. Gall, Aargau and Thurgau. The serious epidemic which broke out in December 1921 in Glarus came to an end during the winter, but in several localities in the Canton of Zurich epidemics appeared, and at the end of the year the disease was quite prevalent in several localities in the Canton of Bern.

¹ No cases were notified in the cantons of Uri, Obwalden, Fribourg, Schaffhausen, Appenzel A. and Valais in either of the years 1921 and 1922.

² No cases were notified in 11 cantons.

England and Wales, the smallpox incidence was three times as high in 1922 as in 1921. In the following is given the annual incidence for the past seven years.

TABLE 45.

REPORTED INCIDENCE OF SMALLPOX IN ENGLAND AND WALES DURING THE PERIOD
1916-1922.

Year	Number of cases
1916	149
1917	7
1918	63
1919	294
1920	275
1921	336
1922	1,013

cases were reported from numerous localities, but mostly from the north of England in the three counties of Derby, Nottingham and York. The localities where the rates were relatively high are given in the table below with the incidence in each.

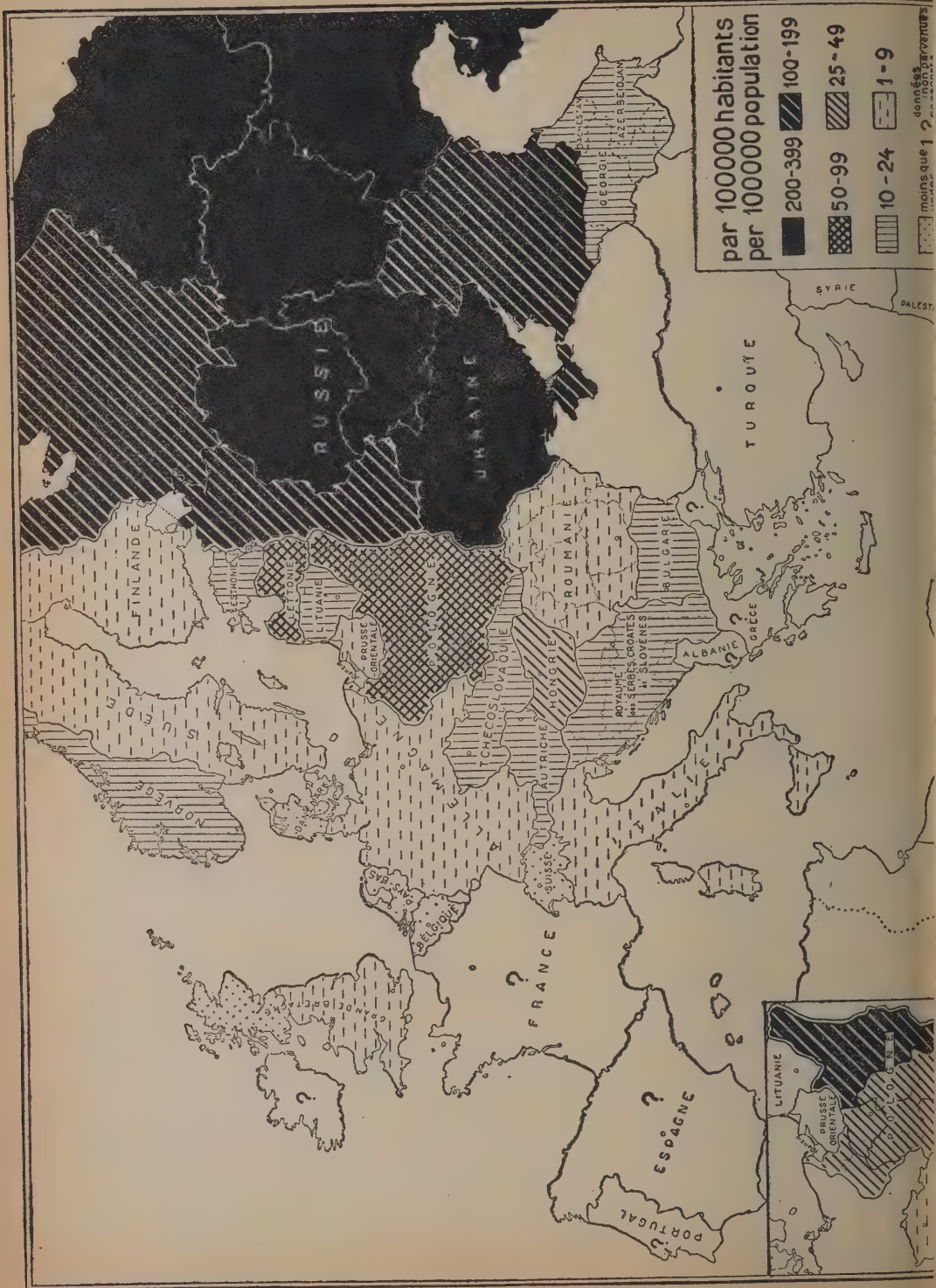
TABLE 46.

INCIDENCE OF SMALLPOX IN VARIOUS LOCALITIES OF ENGLAND IN 1922.

County and District	Number of cases	Rate per 100,000
Belper	49	404
Ilkeston Municipal Borough	109	331
Heanor	35	160
Bolsover	13	113
Clowne	15	86
Blackwell	7	17
Shardlow	3	8.9
Dartford	7	27
Derby: Oldham	48	33
Royton	4	23
County: Poplar	49	30
Nottingham: Eastwood Urban Dist.	31	611
Basford Rural Dist.	22	51
Nottingham C. B.	20	7.5
Bilston	5	18
Barnsley Rural Dist.	17	406
Linthwaite Urban Dist.	39	399
Slaithwaite Urban Dist.	13	239
Golcar	19	183
Middlesbrough C. B.	242	181
Bentley with Arksey	16	123
Saddleworth	40	107
Doncaster	51	93
Todmorden	16	66
Eston	9	29

MAP 5.

GEOGRAPHICAL DISTRIBUTION OF CASES OF DYSENTERY NOTIFIED IN EUROPE IN 1922.



DYSENTERY.

The data for dysentery are incomplete because of the absence of notifications of this disease in France, Portugal, Spain, Albania, and Greece. Such reports as are available are probably more accurate than the reports for typhus and smallpox because of the uncertainty of diagnosis. As pointed out in a previous publication ¹, no distinction is made in the notifications between the various causative agents, and the data relate merely to a group of intestinal infections with similar symptoms.

Nevertheless, the general picture afforded by the reported incidence rates of dysentery in 1922 is quite clear. It is markedly similar to those already shown for typhus and relapsing fever, typhoid, and enteric fever, and, geographically considered, the disease exhibited the same general characteristics as those epidemic scourges in 1922. In spite of incomplete notification in Russia, the highest reported incidence appears in that country and a fairly abrupt drop in the rates is evident as its western border is passed. For the central European countries the rates, while much higher than for Russia, are considerably higher than in the western European countries for which data are available.

The number of notifications and the indicated rates per 100,000 population are given in the following table and are graphically shown in the map on page 46.

TABLE 47.

REPORTED INCIDENCE OF DYSENTERY IN EUROPEAN COUNTRIES IN 1922.

Country	Number of cases	Rate per 100,000
Austria	1,196	19
Belgium	37	0.48
Bulgaria	731	15
Czechoslovakia	1,515	11
Danzig	5	1.4
Denmark	4	0.12
England and Wales	1,294	3.4
Estonia	329	19
Finland	210	6.3
Germany	5,036	8.5
Hungary	2,457	31
Italy	1,197	3.1
Latvia	913	0.56

TABLE 47 (continued).

Country	Number of cases	Rate per 100,000
Lithuania	356	14
Netherlands	14	0.20
Norway (cities only)	92	12
Poland	14,335	53
Roumania	986	6.1
Scotland	42	0.86
Serbs, Croats and Slovenes	2,878	24
Sweden	69	1.2
Switzerland	5	0.13
Russia: Total ¹	294,487	223
Western District	14,107	155
Northern District	5,212	121
Central District	39,429	267
South Central District	27,630	237
Southern District	17,181	176
Crimea	833	109
Middle Volga District	50,623	327
Eastern District	47,123	384
Ukraine	50,138	204
Kirghiz Republic	14,198	281
Turkestan Republic	3,866	54
Siberia	817	10
Transcaucasia District	1,298	23

The concentration of highest prevalence towards the East is also evident within the boundaries of Russia, if the indicated rates for Siberia, Turkestan, and Transcaucasia (where the notification probably grossly incomplete) be excluded. The highest rate is shown in that section which, for demiological purposes, is designated as the "Eastern Division" of Russia. Almost as high a rate is shown for the Middle Volga division. Somewhat lower, but still extraordinarily high rates, between 200 and 300 per 100,000 population, were reported in the Central and the Southern Divisions, in the Kirghiz Republic, and in the Ukraine. In the Western and Northern Divisions, on the other hand, the rates are considerably lower, although still above those reported for the countries lying along the western border of Russia.

Outside of Russia, the highest reported rates are shown in Latvia and Poland, 56 and 53 per 100,000 population, respectively. It is important to note, however, that if the geographical distribution of the disease within Poland is considered in some detail, the highest rates appear in the western section. The provinces of Bialystock, Nowogrodek, Polesia, and Volhynia, suffered rather severely during 1922, rates of 89, 128, 214 and 133, respectively, being indicated. For the whole eastern part of Poland, the rate of 102 per 100,000 is shown, while the rates in the other provinces ranged from 25 to 59, averaging 33 per 100,000 in the east-central zone, 35 in the west central, and 48 in the western part.

¹ Includes figures for waterways, railways and prisons.

The detailed figures are given in the following table:

TABLE 48.

INCIDENCE OF DYSENTERY REPORTED IN POLAND DURING 1922, BY ZONES AND PROVINCES.

Zone and province	Cases reported	Rate per 100,000
<i>Eastern</i>		
Bialystok	7,023	102
Nowogrodek	1,157	89
Polesia	1,658	128
Volhynia	1,833	214
Tarnopol	1,990	133
Wilna	180	13
	205	42
<i>East-Central</i>	3,023	33
Warsaw (city)	551	59
Warsaw (district)	363	17
Lublin	679	33
Lwow	734	27
Stanislowow	696	52
<i>West-Central</i>	2,373	35
Lodz	618	27
Kielce	621	25
Cracow	1,134	57
<i>Western</i>	1,916	48
Pomerania	313	33
Posen	1,031	52
Silesia (Teschen).	572	51

reasons already emphasized, comparisons of the rates between the Central European countries of doubtful value. The indicated rates range from 6 per 100,000 population in Roumania, bordering the south-western boundary of Russia, to 56 in Latvia, and apparently do not follow any well-defined geographical distribution, and it would appear probable that at least some of these differences are principally to differences in the degree of completeness of notification. It is interesting to note, however, that in Czechoslovakia the provinces bordering on Hungary, for which a rate of 31 was recorded, exhibited higher than the average incidence for the country as a whole, as shown in the following table:

TABLE 49.

REPORTED INCIDENCE OF DYSENTERY IN CZECHOSLOVAKIA DURING 1922, BY PROVINCES.

Provinces	Cases reported	Rate per 100,000
Bohemia	467	7.0
Moravia	104	3.9
Silesia	77	12
Slovakia	699	23
Ruthenia	168	28
All Czechoslovakia.	1,515	11

In the Kingdom of the Serbs, Croats and Slovenes, for which a rate of 24 was shown, the incidence was comparatively high in two widely separated provinces, Montenegro and Slovenia, with rates of 52 and 23 respectively. The rates for the other provinces were quite similar, ranging from 7.6 to 21 except for Voivodina which, although bordering on Hungary, showed a rate of only 8 per 100,000.

TABLE 50.

REPORTED INCIDENCE OF DYSENTERY IN THE KINGDOM OF THE SERBS, CROATS AND SLOVENES
1922, BY PROVINCES.

Province	Cases reported	Rate per 100,000
Slovenia	547	52
Croatia	645	23
Voivodina	105	7.6
Serbia	855	21
Bosnia-Herzegovina	393	21
Dalmatia	165	27
Montenegro	168	84
All Kingdom	2,878	24

In the group of countries with reported rates between 1 and 9 per 100,000 were: Germany, Denmark, and Wales, Sweden, Finland, Roumania and Italy, and the city of Danzig. Scotland, Belgium, Netherlands, and Switzerland reported less than one case per 100,000 inhabitants.

The seasonal distribution of the reported cases of dysentery exhibit a marked similarity in countries in which considerable numbers of cases were notified, with the exception of Russia and Ukraine. In nearly all of the other countries for which an appreciable incidence rate is indicated, the beginning of the summer wave of dysentery—or that group of intestinal infections reported as dysentery—occurred during June and the peak was reached in August, the wave coming to an end in September or October. In Norway and Finland, the seasonal prevalence of the disease was lower. But in Russia and the Ukraine, a large number of cases were reported in the earlier part of the year. A definite rise was evident in April, the crest of the wave was attained apparently before August, and a considerable number of cases were reported after the high summer prevalence had subsided in September. The seasonal variation in each of the European countries for which reports are available is shown in the following table:

TABLE 51.

INDICATED INCIDENCE OF DYSENTERY IN EUROPEAN COUNTRIES BY MONTHS IN 1922.

Annual Rate per 100,000 in Specified Period.

Country	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Albania . . . . .	.46	0	.31	.96	.15	.48	.15	.62	1.6	.46	.32	.31
Bulgaria . . . . .	.48	8.9	.73	.50	2.4	9.0	55.	45.	19.	24.	10.	3.4
Czechoslovakia	6.6	4.6	7.6	4.6	4.	5.8	10.	32.	34.	15.	4.	3.8
Denmark . . . . .	.36	0	0	0	0	0	0	.72	.37	0	0	0
Ethiopia	10.	.74	4.	0	.67	3.5	14.1	101.	65.	11.	8.3	5.4
France	1.4	.78	1.1	0	3.2	1.8	7.8	13.	20.	16.	5.8	4.2
Germany	6.9	5.3	7.1	6.8	6.5	12.	62.	141.	79.	31.	10.	4.8
Greece	2.9	1.6	1.5	3.	6.5	18.	99.	287.	184.	51.	12.	1.5
Hungary . . . . .	.94	12.	1.4	2.	1.9	10.	46.	68.	21.	2.8	2.4	1.9
Ireland . . . . .	.17	0	.17	0	1.0	.36	.17	0	0	0	.50	0
Italy	7.5	10.	4.5	6.2	20.	26.	29.	36.	1.6	0	0	0
Japan . . . . .	.14	.40	.51	.60	1.5	3.8	16.	26.	15.	3.6	3.4	1.3
Poland, Croats and Slovenes*	6.6	4.1	3.4	3.2	5.4	12.	44.	80.	73.	31.	15.	6.0
Romania	4.6	.66	1.4	.62	3.0	1.4	.40	1.6	.21	0	0	0
Serbia	117.	130.	123.	156.	200.	286.	533.	597.	308.	116.	44.	30.
Soviet Russia*	92.	125.	112.	181.	186.	236.	425.	403.	348.	138.	44.	34.

Weekly Reports combined into Thirteen Periods of Four Weeks each.

Country	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 June 17	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2	Dec. 3-30
Albania	13.	13.	12.	13.	19.	17.	25.	36.	48.	19.	10.	9.	9.
Bulgaria	0	3.7	0	3.7	3.7	0	3.7	0	0	0	0	0	3.7
Czechoslovakia	1.6	2.4	2.	2.6	3.1	2.4	1.8	1.4	1.	1.4	1.0	1.3	5.1
Denmark	4.6	5.	5.	5.	6.6	8.5	11.	14.	22.	16.	6.6	4.1	3.4
Ethiopia . . . . .	.60	.10	.20	0	.10	1.	3.1	8.1	16.	7.1	2.5	1.0	.34
France	11.	12.	8.3	6.6	8.2	11.	30.	158.	276.	132.	29.	10.	5.5
Germany	0	0	.67	0	0	0	0	0	1.0	0	0	0	0

The prevalence of dysentery apparently was lower in 1922 than in 1921 in all of these countries except two, Bulgaria and England and Wales. In Bulgaria the indicated rate was 28 per cent higher than in 1921, while in England and Wales a very slight increase is shown (6 per cent.) In the other countries, the reported 1922 incidence averages about 50 per cent lower than in the preceding year. This reduction was especially marked in Czechoslovakia, Germany, and the Kingdom of the Serbs, Croats and

Monthly summaries are not for the calendar months, but are additions of weekly data, there being five weeks in the months of March, May, August, and November, and four weeks in the other months.

Slovenes where the 1922 incidence was one-fifth or less of the incidence in 1921. Table 52 shows number of cases reported by several of the countries for each of the two years, as follows:

TABLE 52.

NUMBER OF CASES OF DYSENTERY NOTIFIED IN EUROPEAN COUNTRIES IN 1921 AND 1922.

	1921	1922
Austria.	4,233	1,196
Belgium	493	37
Bulgaria	539	731
Czechoslovakia	8,525	1,515
Danzig.	21	5
England and Wales	1,223	1,294
Esthonia	1,199	329
Finland	391	210
Germany.	31,586	5,036
Italy.	2,194	1,197
Hungary	3,486	2,457
Latvia	1,162	913
Lithuania.	1,155*	356
Netherlands.	20	14
Norway (cities only).	167	92
Poland.	30,998	14,335
Kingdom of the Serbs, Croats and Slovenes	13,269	2,878
Switzerland.	32	5
Russia (Total Federation).	285,882	294,487
Ukraine	55,291	53,132

* 11 months only.

PLAGUE.

From the official reports received¹, it appears that the occurrence of plague in Europe during 1922 was confined to Constantinople, Greece, Russia, Italy, France, Spain and Portugal. There were 29 cases of plague reported from Constantinople during 1922 resulting in ten deaths. The monthly incidence of plague in Constantinople in 1922 is shown in the following table:

TABLE 53.

NUMBER OF CASES OF AND DEATHS FROM PLAGUE REPORTED IN CONSTANTINOPLE DURING 1922, BY MONTHS.

Month	Cases	Deaths
January	1	0
February	0	0
March	1	1
April	2	0
May	1	1
June	1	0
July	0	0
August	3	2
September	10	5
October	3	1
November	5	0
December	2	0

Cases of bubonic plague were reported from Greece, but no details have been received. It is said that the cases were among the permanent inhabitants and none among refugees. In Italy, 20 cases of plague were notified in 1922. All except two were registered at Torra Annunziata from July 18th to September 28th.

It appears fairly well established that the Kirghiz steppes in South-Eastern Russia have been an endemic area of plague for the last 45 years. According to the statement of the Russian Congress of Plague held in 1920, the endemic area has been growing and small outbreaks have become more frequent.

It is almost certain that the occurrence of plague is associated with plague enzoötics among steppe rats in the north of the endemic area and with infested mice in the south.

¹ Data for Spain, Portugal, and France are taken from the *Bulletin mensuel de l'Office international d'Hygiène publique*, December 1922, p. 1597.

Three outbreaks ¹ are known to have occurred in 1922 in South-Eastern Russia. The first, which began in August 1921 and continued through February 1922, was in the Kirghiz region. A total of 23 cases, with 10 deaths, was reported from this area: 18 of the cases were bubonic plague, 3 pneumonic, 1 bubonic and pneumonic and 1 cutaneous plague. The second outbreak was in the Kalmuk region in July 1922, when 24 cases and 17 deaths from bubonic plague were reported. The third outbreak was in Bukejew in December 1922, when 14 fatal cases of pneumonic plague were reported.

In Siberia, cases of plague were reported from the Transbaikalian province as follows: 1 in August, 6 in September, 3 in October and 1 in November, making a total of 11, of which 9 were fatal. 2 were diagnosed as bubonic plague, 6 as pneumonic and 1 was undetermined.

In France, there were 4 cases of plague and 2 deaths reported from St. Ouen, a suburb of Paris, in the week of August 13th to 19th.

In Spain, 12 cases of plague and 6 deaths were reported. Of these, 8 cases and 6 deaths occurred at Barcelona in the period from September 24th to November 7th, and 2 cases each at Carthagen and Valencia on October 18th.

In Portugal, a total of 21 cases of plague and 18 deaths were reported from Lisbon, and occurred throughout the year from February 1st to November 10th.

¹ Since the medical service in the Kirghiz steppe was disorganised by the civil war, famine and epidemic, precise information is difficult to obtain.

MALARIA.

A general picture of malaria prevalence in Europe in 1922 is possible, because the disease is prevalent in only about half of the countries. The countries for which reports are available cannot be compared, even roughly, for the reason that notifications of the disease are admittedly very incomplete in some of them. The number of cases notified during the year are given below for the eleven countries for which reports have been received:

TABLE 54.

NUMBER OF CASES OF MALARIA NOTIFIED IN EUROPEAN COUNTRIES DURING 1922.

Country	Number of cases
Austria.	19
Czechoslovakia	70
Denmark.	24
Italy.	234,656
Latvia	57
Lithuania.	136
Norway	11
Poland.	17,419
Scotland	117
Kingdom of the Serbs, Croats and Slovenes.	16,327
Russia	1,986,417
Switzerland	3

The malaria situation in Russia during the past few years has been recognized as increasing in importance. Comparable statistics of prevalence by years are not available, but, as Professor Tarassévitch pointed out in his recent report ¹, "if we turn from the figures to the opinions of all the doctors, there is a unanimous opinion that malaria has developed very greatly during the years in question (1914-1922, *seq.*); serious forms (tropical) are met with much more frequently than formerly; it is not exceptional to find them even at Moscow. The epidemic has spread outside its usual limits almost as far as the Arctic Circle." A Central Malaria Commission was formed in 1922, with local commissions in the infected areas, for the purposes of studying the prevalence of the disease and of attempting to control the epidemic. Their reports mentioned facts which give evidence of the appearance of fresh waves of infection, of the frequency of a virulent tropical type, of a high rate of mortality, and of a prevalence caused by malaria in some localities ². At the first All-Russian Congress on Malaria, which was held in Moscow, January 23rd to 26th, 1923, it was pointed out in the conclusions that the epidemic had assumed unusual proportions from the points of view of the number of cases, the geographical distribution, the frequency of tropical forms, and the high mortality rate. The Congress ascribed

¹ Epidemics in Russia since 1914 — Report to the Health Committee of the League of Nations, by L. Tarassévitch, Part II, *Epidemiological Intelligence*, No. 5, October, 1922, p. 23.
² *Epidemiological Report*, No. 36, p. 2, January 13, 1923.

this fact to the general unfavourable sanitary conditions, and, more specifically, to: (a) the change in climate in Northern Russia (*i.e.* the rise in the annual average of temperature); (b) to the shortage of hospital and sanitary accommodation; (c) to the shortage of quinine during the past which led to many relapses; (d) to the mass movements of the population (migration, repatriation, movement of troops), which facilitated the spread of malaria to districts where the disease was previously unknown; and stated that the situation was seriously aggravated by famine through diminished resistance to the disease and by the destruction of the wealth of large regions ¹.

TABLE 55.

REPORTED INCIDENCE OF MALARIA IN RUSSIA IN 1922, BY GOVERNMENTS.

Region or Government	Cases	Rate per 100,000	Region or Government	Cases
<i>Western Region:</i>			<i>South-Central Region:</i>	
Petrograd City	328	46	Briansk	1,700
Petrograd Gov.	—	—	Orel	3,403
Novgorod	379	42	Tambov	23,205
Pskov	164	13	Voronezh	20,653
Vitebsk	83	6.1	Kursk	7,039
White Russia	—	—	Ukraine	8,094
Gomel	1,041	44	Crimea	1,396
<i>Northern Region:</i>			<i>Middle Volga Region:</i>	
Murmansk	124	653	Nijni-Novgorod	16,672
Karelia	18	12.5	Mariskaia	2,808
Arkhangelsk	6,857	1,899	Chuvach	13,322
Olonetz	6	2.8	Tartar	59,295
Cherepovetz	1,240	196	Simbirsk	63,200
Vologda	326	36	Penza	9,904
Severodvinsk	9,653	1,527	Saratov	109,664
Ziriansk	1,433	766	Samara	175,420
Kostroma	1,523	126	German Commune	2,630
<i>Central Region:</i>			<i>Southern Region:</i>	
Rybinsk	226	29	Tzaritzin	30,114
Yaroslav	4,409	677	Astrakhan	37,015
Ivanovo-Vosn.	3,164	479	Kalmuk	2,821
Vladimir	13,730	1,066	Don	33,335
Twer	531	29	Kubano-Chern.	52,857
Smolensk	1,614	80	Stavropol	11,149
Moscow City	2,350	229	Terek	18,405
Moscow Government	31,840	1,911	Cherkasse	816
Kaluga	1,205	126	Kabardinsk	4,908
Tula	436	25	Mountain Republic	28,344
Riazan	42,277	1,959	Daghestan	166,780

¹ *Epidemiological Report*, No. 48, p. 3. April 24, 1923.

TABLE 55 (continued).

Region or government	Cases	Rate per 100,000	Region or government	Cases	Rate per 100,000
<i>Transcaucasia:</i>			<i>Eastern Region (continued):</i>		
Armenia	6,253	—	Tiumen	4,225	359
Georgian	74,437	3,550	Cheliabinsk	1,778	132
Ossetina	128,336	10,571	Bachkir	32,066	2,529
Dagestan	521	—	Ufa	25,741	1,281
Ingush	7,320	—			
Chechnia	295,569	12,461	Kirghiz	80,948	1,600
<i>Central Region:</i>			Turkestan	103,804	1,441
Volga	6,292	307	Siberia	34,000	421
Ural	11,184	1,633	Railways	76,980	—
Perm	5,097	287	Waterways	53,669	—
Kazakhstan	8,292	425			
			Total	1,986,147	1,509

While the notifications of the disease in 1922 are, from all accounts, very incomplete in that they indicate its real incidence, they probably depict in a general way the areas of greatest prevalence. Table 55 the reported rates of malaria incidence are given in detail by governments within the administrative boundaries, and, with these rates as a basis, a shaded map has been drawn (see page 58). Incomplete notifications probably obscure the picture, but it will be noted that two areas of greatest prevalence are indicated: one in the extreme south-east in that section which has been, for epidemiological purposes, designated as Transcaucasia, and another in eastern Middle Volga, the prevalence decreasing progressively less toward the north and west. Summarised by epidemiological divisions, the reported rates were as follows:

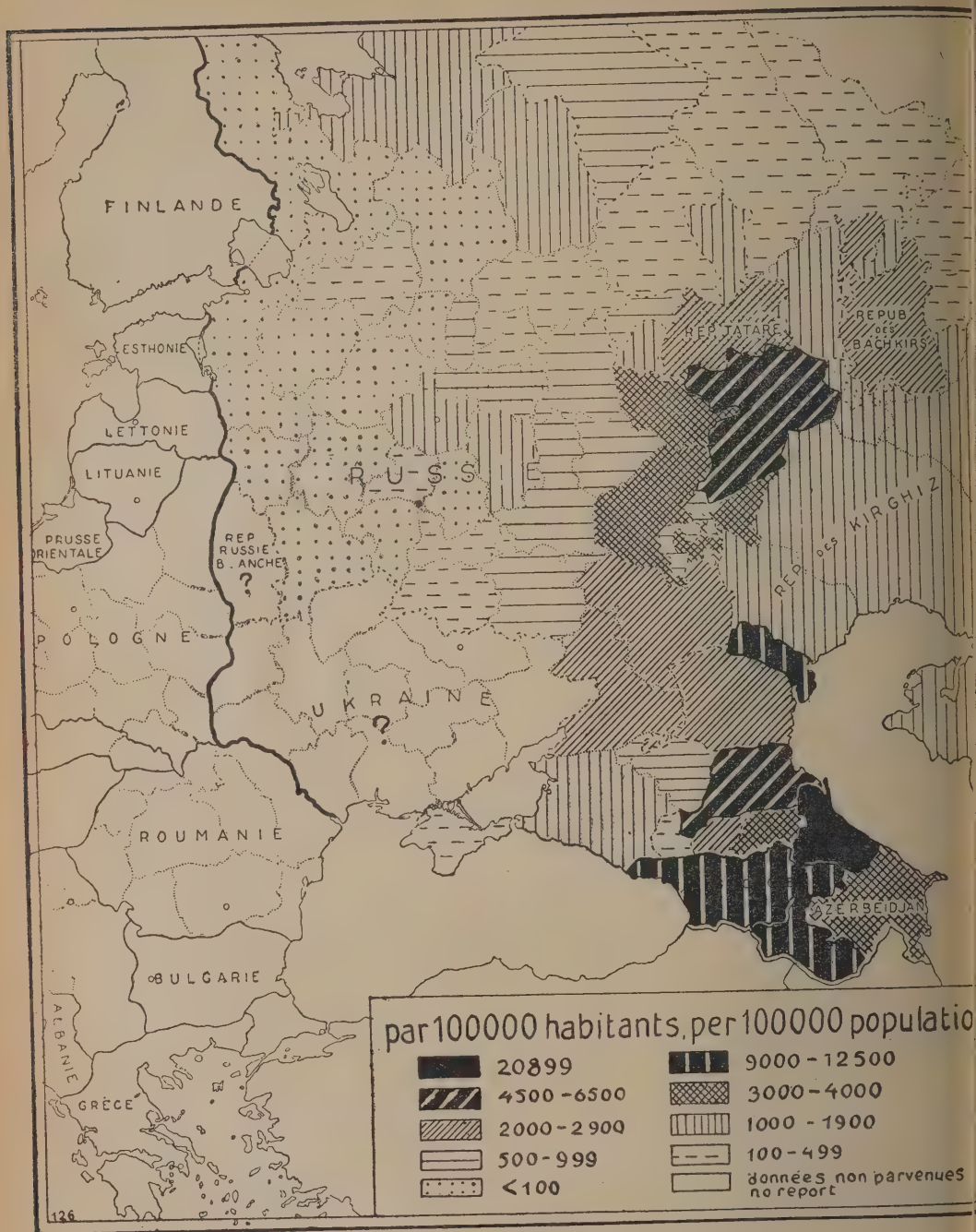
TABLE 56.

REPORTED INCIDENCE OF MALARIA IN RUSSIA IN 1922 BY EPIDEMIOLOGICAL DIVISIONS.

Division	Rate per 100,000
Western	22
Northern	492
Central	690
South-Central	480
Eastern (North)	772
Middle Volga	2,925
Kirghiz Republic	1,600
Turkestan	1,440
Southern (Eastern)	3,962
Transcaucasia (South-East)	9,017

MAP 6.

DISTRIBUTION OF CASES OF MALARIA REPORTED IN RUSSIA, BY GOVERNMENTS.



Later statistics on the seasonal distribution of malaria in different divisions of Russia are available in those already published in *Epidemiological Intelligence* No. 6, but they are sufficient to indicate the general character of the seasonal variation of the disease. The curve for the whole of Russia, based on the incomplete figures¹, shows two waves: one in the late spring and a second and much higher one in the early autumn. A further analysis of the curve is possible by studying the variations in the epidemiological divisions, which points clearly to interesting and probably significant differences in the curves for the various divisions, as follows: (1) in the northern, eastern (north-eastern) and western (north of the Ukraine), the highest prevalence of the disease occurred in May, or June, and it may be noted that in Poland the height of malaria prevalence was definitely reached in June; (2) in the extreme south-eastern region, in which are included the Southern Caucasus and Transcaucasia, the peak of malaria prevalence was clearly not earlier than September; (3) in the remaining sections for which adequate seasonal data are available (*i.e.* exclusive of the Caucasus and possibly Turkestan) which extend in a south-easterly direction from those regions mentioned under (1) toward those mentioned under (2), the curves exhibit two distinct "peaks", the first in May and the second in or not earlier than September. In these divisions are the Central, with a higher prevalence in June than in September, and the Middle Volga and South-Central Divisions and the Kazan Republic, in which the September peaks are approximately equal to or more pronounced than the earlier peaks. There thus appeared in 1922 three distinct types of curves of seasonal fluctuation of malaria prevalence in Russia, which characterise fairly well-defined areas.

Unfortunately, adequate data are not at hand for a proper study of the possible conditions which may have been responsible for these differences, and too much dependence cannot be placed on the available data. But, assuming the data to be sufficiently accurate, at least two suggestions as to the factors involved may be considered: (1) that differences in climatic conditions might account, in some cases, for the early drop in incidence in the northern and north-western sections, as contrasted with the prolonged high prevalence and late "peak" of incidence in the extreme south-eastern sections; (2) that some unusual factor operated to cause or to increase the second and later wave of incidence in the southern sections lying between. It is possible, of course, that the appearance of a second or autumnal wave is due entirely to the same conditions which have been advanced as being responsible for the first wave, but it is more probable that it is a different and rather generally recognised variation in certain other countries, but it is pertinent to draw attention to the probable influence of another factor which was peculiar to this section. It is suggested by migratory movements of the population within Russia during 1922. It is probable that large numbers of the population in the general area in which a secondary wave of malaria prevalence had, as the result of famine conditions, migrated in the late spring, after the melting of the snow, towards the south, and that many of them returned during or shortly before harvest time. The significance of this return of refugees from heavily infected areas in the south and south-east is at once suggested in connection with the appearance of a second and very pronounced wave of the disease in the region to which the refugees returned. The effect of internal migrations upon the distribution of the various forms of the disease in sections where they had previously been unobserved has already been referred to.

The highest reported incidence within the boundaries of Poland was in the eastern provinces, where the notified cases per 100,000 population numbered 845 in Polesia, 365 in Volhynia, and 174 in

¹ *Epidemiological Intelligence*, No. 6, Table 7, pp. 35-37.

² League of Nations: "Report on Economic Conditions in Russia, with Special Reference to the Famine of 1921 and the State of Agriculture", p. 29. See also Annex XII, "The Density and Percentage of Starving Population", giving tables by provinces and districts, and map.

Nowogrodek. For the remainder of Poland the recorded prevalence was much lower, averaging 10 per 100,000. The seasonal variation in the cases in 1921 and 1922 was as follows:

TABLE 57.

SEASONAL DISTRIBUTION OF CASES OF MALARIA NOTIFIED IN POLAND IN 1921 AND 1922

Four-week period (1922)	Number of cases notified in the Corresponding period 1921	Specified period 1922
January 1-January 28	27	53
January 29-February 25	17	145
February 26-March 25	96	685
March 26-April 22	2,330	1,196
April 23-May 20	5,951	2,152
May 21-June 17	11,305	3,555
June 18-July 15	18,003	3,215
July 16-August 12	9,947	2,832
August 13-September 9	2,988	1,622
September 10-October 7	946	912
October 8-November 4	565	546
November 5-December 2	272	319
December 3-December 30	192	187

It will be noted that the prevalence of the disease in 1922 was very much lower during the period of May to August, inclusive, than in the same period in 1921, when there occurred a sudden fall in incidence of an almost epidemic character.

The number of cases of malaria notified in Italy during the last ten years and the number of deaths registered as due to malaria for nine years up to 1922, together with the indicated rates shown in the following table:

TABLE 58.

MALARIA PREVALENCE IN ITALY, 1913-1922.¹

Year	Cases notified	Number of Deaths registered	Cases per 100,000 population	Indicated rates for Deaths per 100,000 population
1913.	157,152	1,688	444	4.8
1914.	129,482	1,609	361	4.5
1915.	214,092	1,859	588	5.1
1916.	224,217	1,899	611	5.2
1917 ²	303,057	2,279	827	6.2
1918 ²	249,529	2,347	688	6.5
1919 ²	247,084	1,937	685	5.4
1920.	227,747	2,044	637	5.6
1921.	267,589	1,918	729	5.2
1922 ³	234,656	—	628	—

¹ The statistics in Tables 58, 59 and 60 are taken from "Il Bollettino (Sanitario) del Ministero della Sanità" which was published subsequent to the compilation and printing of the statistics for Italy presented in this report.

² The data for the years 1917-1920 are incomplete as to population.

³ The rates for cases and deaths for 1922 are computed on the basis of the population as given previously.

seasonal variation in the cases of malaria notified in 1921 and 1922 was as follows:

TABLE 59.

SEASONAL DISTRIBUTION OF CASES OF MALARIA NOTIFIED IN ITALY IN 1921 AND 1922 ¹.

Month	Number of cases notified in	
	1921	1922
January	6,893	6,435
February	5,641	6,663
March	6,667	6,576
April	8,033	7,955
May	9,824	10,882
June	16,250	20,301
July	34,102	41,754
August	63,108	47,068
September	56,943	38,419
October	33,319	25,470
November	16,374	12,024
December	10,435	11,109

the case of Poland, the incidence of malaria in 1921 was much more acute during the malaria season during 1922. The difference in the seasonal prevalence between the two countries is marked, the decline in Poland setting in considerably earlier in Poland than in Italy. geographical distribution of the disease in 1922 within the boundaries of Italy by provinces is in the following table:

TABLE 60.

REPORTED INCIDENCE OF MALARIA IN ITALY IN 1922, BY PROVINCES ¹.

Province	Number of cases	Rate per 100,000
Piedmont	268	8
Liguria	19	1
Lombardy	6,340	124
Venetia	18,868	351
Emilia	10,067	241
Tuscany	1,359	48
The Marches	170	15
Perugia-Umbria	52	7
Latium	4,780	314
Abruzzi and Molise	4,930	343
Campania	6,981	196
Apulia	43,577	1,858
Basilicata	8,932	1,913
Calabria	46,640	3,237
Sicily	36,737	889
Sardinia	47,936	5,540

Statistics in Tables 58, 59 and 60 are taken from "Il Bollettino (Sanitario) del Ministero dell'Interno", published subsequent to the compilation and printing of the statistics for Italy presented in the present report.

The relatively high prevalence of the disease in Sardinia and in Southern Italy is clearly indicated. It is pointed out in the official summary issued by the Italian Ministry of the Interior that the decrease in 1922 over 1921 occurred in the provinces of Tuscany, Venetia, Latium, Sardinia, Basilicata. Smaller decreases occurred in Sicily, Lombardy, Campania, Piedmont, the Marche, Umbria. In the Abruzzi the disease has been almost stationary, whereas a definite recrudescence took place in Emilia, Calabria and Apulia.

The statistics of malaria notifications in the Kingdom of the Serbs, Croats, and Slovenes are incomplete as to details for geographical distribution and season. The data available are sufficient to indicate that the reported rate of malaria incidence was much higher in Dalmatia than in any other province of the kingdom and relatively high in Serbia and Montenegro.

ENTERIC FEVER.

it is impossible to distinguish between typhoid and paratyphoid fevers in the reports received from most of the countries, these diseases have been included under the single term 'enteric fever' in the summary.

Table 61 shows the reported incidence, together with the corresponding annual rates per 100,000 persons, of enteric fever in the several European countries for 1922. This information is given graphically in the map on page 64. The geographical subdivisions of Russia that are used for the purposes of the epidemiological reports have been described in *Epidemiological Intelligence* No. 6, page 25.

TABLE 61.

REPORTED INCIDENCE OF ENTERIC FEVER IN EUROPEAN COUNTRIES IN 1922.

Country	Number of Cases	Annual rate per 100,000
Austria	2,304	36
Belgium	1,104	15
Bulgaria	2,910	60
Czechoslovakia	6,705	49
Denmark	478	15
Danzig	76	22
England and Wales	2,460	6.5
Estonia	854	49
Finland	1,297	39
Germany	10,993	19
Hungary	5,477	70
Italy	22,971	59
Latvia	1,011	62
Lithuania	1,140	46
Netherlands	1,132	17
Norway (cities only)	201	26
Poland	21,241	79
Roumania	5,516	34
Scotland	440	9.0
King. of the Serbs, Croats and Slov.	3,868	32
Sweden	911	15
Switzerland	343	6.8
Russia: Total ¹	314,440	238
Russia, by Divisions:		
Western	10,204	112
Northern	3,443	80
Central	26,357	179
South-Central	39,844	341
Ukraine	97,654	375
Southern	21,323	219 (continued on p.65)

¹ Includes figures for waterways, railways and prisons.

MAP 7.

GEOGRAPHICAL DISTRIBUTION OF CASES OF ENTERIC FEVER NOTIFIED IN EUROPE DURING 1921



TABLE 61 (continued from p. 63).

Country	Number of Cases	Annual rate per 100,000
Russia, by divisions (continued) :		
Crimea	4,421	580
Middle Vblga	40,251	260
Eastern	28,117	229
Kirghiz Republic	9,441	187
Turkestan Republic	2,612	36
Siberia	8,340	103
Transcaucasia.	3,279	58

area in which enteric fever seems to have been most prevalent is Southern and Eastern Russia. In this region the incidence has been reported as greater than 200 per 100,000 population. In the Ukraine and South-Central Russia, incidence rates in excess of 300 per 100,000 have been reported. Rates ranging from about 100 to 200 have been reported from Western and Central Russia. Slightly lower incidence was indicated in Northern Russia, Latvia and Poland. Three other countries reporting incidence rates varying from 50 to 100 per 100,000 are Italy, Hungary and Bulgaria. Countries bordering on these latter States, namely Czechoslovakia, Austria, Roumania and the Kingdom of the Serbs, Croats and Slovenes have reported from 30 to 50 cases of enteric fever per 100,000 population; Esthonia, Lithuania and Finland form another area in the same category. In Belgium, the Netherlands, Germany and the Scandinavian countries, the prevalence of these diseases is reported to have ranged from 10 to 30 cases per 100,000, while only in Switzerland and England and Wales were incidence rates of less than 10 reported.

Fourteen countries have reported provisional mortality figures for enteric fever for the year as shown in Table 62, indicating mortality rates ranging from 0.97 in England and Wales to 24.45 in Spain.

TABLE 62.

NUMBER OF CASES OF AND DEATHS FROM ENTERIC FEVER IN CERTAIN COUNTRIES OF EUROPE DURING 1922, AND RATES PER 100,000 POPULATION.

Country	Number reported of cases deaths		Rate per 100,000 for cases deaths	
Austria	2,304	241	35.9	3.75
Bulgaria	2,895	303	59.6	6.23
Czechoslovakia	6,705	587	49.3	4.32
Danzig	76	12	21.7	3.42
England and Wales ¹ . . .	1,049	185	5.5	0.97
Hungary	5,477	645	69.9	8.23
Lithuania	1,140	33	45.6	1.32
Norway ²	201	16	25.6	2.04
Netherlands	1,132	133	16.5	1.94
Poland	21,241	1,582	79.0	5.88
Roumania	5,516	628	33.9	3.86
Scotland	440	65	9.0	1.33
Spain	*	5,203	*	24.45
Kingdom of the Serbs, Croats and Slovenes . . .	3,868	447	32.2	3.72

¹ 05 "great towns" only. ² Cities only. * No information.

The outstanding feature of this table is the high enteric mortality reported from Spain. Reports received make no reference to the number of cases of enteric fever in Spain in 1922, but mortality statistics can be taken as a basis, the incidence rate for this disease in that country being second only to that of Russia.

Table 62 shows that the number of deaths from enteric fever in Spain in 1922 was 5,203—a mortality rate of 24.45 per 100,000. The same table shows also that the case fatality rate for enteric fever in the eleven countries, exclusive of Spain and Danzig, varied from 3 % to 18 %, with a weighted average of approximately 9.5 %. If it is assumed that average conditions obtained, there were probably 40,000 to 60,000 cases of enteric fever in Spain in 1922, and a morbidity incidence well over 100,000 is indicated.

It is obvious, but the fact is perhaps worth repeating, that exact comparisons between countries are not justified by these data, but the broad outlines of the situation seem to be drawn with sufficient clearness to suggest a rough picture of the geographical differences in sanitary conditions in Europe, particularly from the point of view of excreta-borne diseases. These differences are the more important because in a general sense they correspond with the results obtained from the study of certain epidemic diseases.

Table 63 presents the data reported regarding the incidence of enteric fever in those European countries which sent in information for the two years 1921 and 1922. Bulgaria, Denmark and Finland are the only countries in the list reporting a higher general incidence for 1922 than for 1921. However, further examination of the Russian rate for 1922 discloses the fact that three of its twelve epidemiological subdivisions, namely Crimea, the southern division, and the Kirghiz Republic, report for the first ten months that the incidence has been such as to indicate a somewhat higher prevalence of enteric fever during this year than in 1921.

TABLE 63.

NUMBER OF CASES OF ENTERIC FEVER NOTIFIED IN EUROPEAN COUNTRIES IN 1921 AND 1922

Country	1921	1922
Austria	4,288	2,304
Belgium	1,429	1,104
Bulgaria	1,895	2,895
Czechoslovakia	9,207	6,705
Danzig	179	76
Denmark	347	478
England and Wales	3,835	2,460
Estonia	1,183	854
Finland	1,311	1,297
Germany	18,828	10,993
Italy	29,602	22,971
Latvia	1,431	1,011
Lithuania	1,277 ¹	1,140
Netherlands	2,004	1,132
Norway (cities only)	600	201
Poland	29,536	21,241
King. of the Serbs, Croats and Slov.	4,617	3,868
Sweden	813	911
Switzerland	394	263

¹ The 1921 figures are for ten months only.

TABLE 63 (continued).

Country	1921	1922
Russia, by divisions :		
Western	22,448	10,204
Northern	6,345	3,443
Central	43,851	26,357
South-Central	62,044	39,844
Ukraine	122,085	97,654
Southern	8,065	21,323
Crimea	2,927	4,421
Middle Volga	41,767	40,251
Eastern	32,524	28,117
Kirghiz Republic	8,563	9,441
Turkestan Republic	4,522	2,612
Siberia	20,213	8,340
Transcaucasia	—	3,279

Table No. 64 the incidence of enteric fever is shown for the several European countries, with exceptions already noted, for the year 1922, by months, or in some cases by four-week periods.

TABLE 64.

INDICATED INCIDENCE OF ENTERIC FEVER IN EUROPEAN COUNTRIES IN 1922, BY MONTHS.

Annual Rate per 100,000 in Specified Period.

Country	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
... ..	6.5	9	8.2	7.2	9.1	15	15	21	24	21	21	16
... ..	50	25	17	7	9.4	12	26	54	107	126	143	140
Czechoslovakia . .	50	41	37	42	33	38	65	76	77	56	45	31
... ..	3.2	2.8	9.7	9.6	27	18	25	15	16	17	23	7.9
... ..	86	37	42	25	24	42	39	85	62	57	42	42
... ..	37	21	20	20	17	15	61	77	73	56	43	25
... ..	54	21	19	41	43	28	54	131	169	134	100	41
... ..	81	50	35	35	46	43	79	97	82	82	76	39
... ..	60	92	47	58	31	45	44	60	50	30	23	12
... ..	8.6	12	15	9.7	12	18	29	19	29	26	20	18
(cities) . .	21	17	30	28	52	36	16	18	48	16	9	15
... ..	22	15	12	18	19	15	28	63	99	55	36	25
... of the												
Croats and												
... ..	30	14	9.4	8.7	14	10	22	46	82	71	50	31
... ..	22	7.5	8	9.7	18	12	22	29	25	13	11	7.4
... ..	474	453	341	275	227	180	150	152	176	174	128	107
... ..	787	776	460	467	357	309	218	205	329	288	193	191

Monthly summaries are not for the calendar month but are additions of weekly data, there being four months of Jan., Feb., April, June, July, Sept., Oct., and Dec., and five weeks in the months of May, August, and Nov.

TABLE 64 (continued).

Weekly Reports combined into Thirteen Periods of Four Weeks¹.

Country	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 Jun. 17	Jun. 18 July 15	Jul. 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2
Austria . .	34	16	18	28	27	30	36	56	65	59	36	33
Danzig . .	33	30	11	7.4	22	3.7	22	33	41	26	11	26
England and Wales . .	5.7	5.6	5.9	5.6	6.6	7.1	7.6	6.3	6.3	8.6	7.3	6.7
Germany . .	13	12	15	12	12	16	26	23	27	28	22	21
Italy . . .	37	18	17	17	21	28	44	92	152	155	92	64
Poland . .	110	89	81	75	66	54	48	61	96	131	91	66
Switzerland.	2.7	1.3	2.7	4.7	3.7	2.7	8.4	7.4	17	14	8.4	7.4

On the whole, the course of the disease during 1922 was encouraging. In the map on page 6, based on the monthly reported incidence of enteric fever in this group of countries are shown. It seems to have been a general increase in the prevalence of this disease in all the territory on the sides of the Russian border during January, and this increase was apparently both more general and more general to the east rather than to the west of this line. But, with the exception of a late summer rise, highest in October in the Ukraine and a month earlier in the rest of Russia, there has been a marked decline from month to month in the enteric incidence in these two countries during 1922. Excluding Finland and Roumania, where the incidence of enteric fever was comparatively low, all the countries in this region showed at the end of the year rates less than those reported for January.

The curve for Poland was influenced by high rates in the eastern zone during the early part of the year; the summer rise was due, however, not to greater prevalence in this region but apparently to marked increased incidence in the east- and west-central zones, as shown in the following table, which gives the number of cases reported from each province and the totals for the four-week periods.

TABLE 65.

DISTRIBUTION OF CASES OF ENTERIC FEVER NOTIFIED IN POLAND IN 1922, BY DISTRICTS AND BY FOUR-WEEK PERIODS.

Province	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 June 17	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2
All Poland .	2,262	1,837	1,660	1,539	1,364	1,119	990	1,264	1,988	2,704	2,031	1,111
Eastern Zone	1,029	856	852	723	628	482	334	394	477	552	485	341
Bialystok.	210	152	108	61	35	46	43	49	65	108	95	66
Nowogrodek	72	104	144	185	144	129	84	64	78	67	62	41
Polesia . .	216	228	319	274	273	164	89	110	53	87	71	28
Volhynia .	482	277	237	141	84	52	60	74	132	179	165	111
Tarnopol .	49	64	38	23	39	26	19	22	40	42	45	31
Vilna . .	0	31	6	39	53	65	39	75	109	69	47	31

¹ For those countries for which monthly summaries are not available.

TABLE 65 (continued).

	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 June 17	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2	Dec. 3-30
Central													
... ..	657	451	426	397	360	344	346	441	745	1,092	667	502	360
aw City	56	25	29	29	30	37	48	96	165	269	189	85	64
aw Dist.	166	97	67	101	95	85	87	94	214	248	146	116	91
n . . .	155	110	178	112	98	93	90	109	129	266	141	130	83
. . .	176	107	85	125	90	109	95	110	203	275	153	102	71
slawow	104	112	67	30	47	20	26	32	34	34	38	69	51
Central													
... ..	518	479	357	357	328	255	248	349	630	913	703	469	351
... ..	159	124	118	93	108	115	107	150	283	366	271	180	140
... ..	194	195	96	101	102	71	87	121	228	384	289	231	150
w. . .	165	160	143	163	118	69	54	78	119	163	143	58	67
Zone	58	51	25	62	48	38	62	80	136	147	176	86	76
rania	5	10	7	7	4	9	33	35	42	48	31	17	18
. . .	53	37	14	37	37	23	19	31	65	75	131	50	41
en .	0	4	4	18	7	6	10	14	29	24	32	19	17

Table 66 gives the annual indicated incidence and mortality rates for the various provinces and Poland during 1922.

TABLE 66.

REPORTED INCIDENCE AND DEATH RATES PER 100,000 POPULATION FOR ENTERIC FEVER IN POLAND DURING 1922, BY ZONES AND BY PROVINCES.

Province	Indicated case rate per 100,000	Death rate per 100,000
All Poland	79	5.88
Eastern Zone	108.2	4.88
Bialystok	83.9	2.93
Nowogrodek	94.8	1.54
Polesia	225.5	14.33
Volhynia	139.0	6.53
Tarnopol	32.6	2.61
Vilna	125.6	3.68
East-Central Zone.	73.9	6.75
Warsaw City	120.5	16.54
Warsaw District	76.1	5.78
Lublin	81.1	3.64
Lwow	62.4	7.08
Stanislawow	49.8	5.62

TABLE 66 (continued).

Province	Indicated case rate per 100,000	Death rate per 100,000
West-Central Zone .	88	8.13
Lodz	98.1	10.81
Kielce	88.6	4.53
Cracow	75.5	9.67
Western Zone . . .	25.9	1.81
Pomerania	28.3	2.44
Posen	30.2	2.13
Teschen	16.4	89.00

In Roumania, as might be expected because of its proximity to the Ukraine, Bessarabia reported a higher general incidence of enteric fever in 1922 than have the other provinces. Hence the curve of monthly incidence in Bessarabia bears little resemblance to that of the Ukraine; summer rise, with an indicated incidence of approximately four times the average prevalence in the first six months of the year, being the most prominent feature in the former, whereas the incidence in the Ukraine was reported as more than twice that of the highest summer month. The seasonal distribution of the enteric fever incidence in Roumania, by provinces, is shown in the following table:

TABLE 67.

ROUMANIA : SEASONAL INCIDENCE OF ENTERIC FEVER IN 1922, BY PROVINCES.

Province	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
Old Kingdom. . .	46	32	24	68	48	37	98	290	489	219	12
Ardeal	111	64	67	88	133	56	95	162	427	289	22
Bukovina.	27	13	3	16	11	12	15	29	33	32	2
Bessarabia	114	76	76	69	85	91	172	389	368	216	11
Roumania . .	298	185	170	241	259	196	380	870	1,317	756	48

Table 68 gives the number of cases and deaths, together with the corresponding rates per 100 inhabitants, for each of the Roumanian provinces for the year 1922.

TABLE 68.

REPORTED CASES OF AND DEATHS FROM ENTERIC FEVER IN ROUMANIA BY PROVINCES, WITH INDICATED INCIDENCE AND MORTALITY RATES PER 100,000 INHABITANTS FOR THE YEAR 1922.

	Number of Cases	Deaths	Rate per 100,000 cases	Rate per 100,000 deaths
Old Kingdom. . .	1,549	234	19.6	2.96
Ardeal	1,861	212	35.7	4.08
Bukovina	224	29	27.6	3.57
Bessarabia	1,882	153	80.3	6.52

The incidence rates for enteric fever in the different zones in Poland and the larger subdivisions of Romania have been shown on the map which gives the rates for the various European countries (page 64). The trend of the disease at the end of the year was almost uniformly favourable in the region.

Due to the absence of detailed information, discussion of the apparently serious enteric fever situation in the Balkans is impossible. It is also impossible to say, without established standards on which to base a judgment, whether the indicated incidence rates for the last months of 1922 are fairly representative of the normal prevalence of enteric disease in the other European countries. Although many of these rates are still very high when compared with those of England and Wales, for example, Bulgaria is the only country indicating a decidedly upward tendency in the incidence of enteric fever at the end of the year.

SCARLET FEVER.

It is obvious that more than usual caution must be exercised in drawing conclusions from apparent differences in the reported incidence rates in a report on scarlet fever in the different countries. The data for scarlet fever and diphtheria should perhaps be considered in a different category from that for diseases which have been marked by acute or severe epidemics in Eastern Europe during the past few years, as, for example, typhus, relapsing fever and cholera. The latter diseases are rare in Western Europe, and their occurrence is probably notified with a relatively high degree of completeness.

TABLE 69.

CASES OF SCARLET FEVER REPORTED DURING 1922, TOGETHER WITH THE INDICATED ANNUAL INCIDENCE RATES PER 100,000 POPULATION.

Country	Cases	Annual rate
Austria	2,660	41
Belgium	1,514	20
Bulgaria	7,185	149
Czechoslovakia	10,785	79
Danzig	135	39
Denmark	5,110	155
England and Wales	107,924	285
Esthonia	594	34
Finland	990	30
Germany	32,443	55
Hungary	13,164	168
Italy	10,532	27
Latvia	1,598	98
Lithuania	437	18
Netherlands	3,301	48
Norway (cities only)	912	116
Poland	14,717	55
Roumania	24,990	154
Scotland	14,583	298
Kingdom of the Serbs, Croats and Slovenes	17,971	150
Sweden	10,710	181
Switzerland	2,270	59
Russia ¹	68,262	52
Russia, by divisions :		
Western	5,441	60
Northern	2,660	62
Central	15,556	106
South-Central	5,466	47
Southern	2,376	24
Crimea	785	103
Middle Volga	9,737	63
Eastern	3,681	30
Ukraine	18,325	70

¹ Includes figures for waterways, railways and prisons.

The number of notifications in proportion to population in 1922 in England and Wales were 85 cases per 100,000 inhabitants. Four areas reported rates between 100 and 200, namely: (1) Denmark, Sweden and Norway; (2) Hungary, Roumania, Bulgaria and the Kingdom of the Serbs, Croats and Slovenes; (3) the central region in Russia; and (4) the Crimea. The rates indicated for Denmark, Hungary and Roumania, ranging from 150 to 181, were somewhat higher than those of the other countries composing these groups.

Rates between 50 and 100 were indicated from the territory including Germany, Switzerland, Czechoslovakia, Poland, Latvia, the Ukraine, and the Western, Northern and Middle Volga regions of Russia. The Netherlands, Italy, Danzig, Finland, Esthonia and the Eastern Russian region reported rates ranging from 25 to 49. Spain also falls into this group if the estimate is based on the scarlet fever mortality (given in Table 70) and the ratio between the morbidity and the mortality in those countries which reported both, as has been done in the case of other diseases. Belgium, Lithuania and the southern region of Russia reported the prevalence of fewer cases than 25 per 100,000 population.

The reporting of cases of scarlet fever is not complete in any country and the calculated rates are only as a general indication of fluctuations from month to month or year to year. No conclusions, therefore, are suggested as to relative incidence in on presenting the statistics of scarlet fever.

TABLE 70.

NUMBER OF CASES OF AND DEATHS FROM SCARLET FEVER IN CERTAIN EUROPEAN COUNTRIES IN 1922 AND RATES PER 100,000.

Country	Number reported of cases	deaths	Rate per 100,000 cases	deaths
Denmark	2,660	66	41	1.03
Sweden	7,185	1,211	149	24.91
Norway	10,785	1,188	79	8.74
Finland	135	3	39	0.85
England and Wales ¹	64,239	888	338	4.67
Germany	13,164	2,036	168	25.97
Poland	437	26	18	1.04
Denmark	3,301	35	48	0.51
Belgium (cities only)	912	6	116	0.08
France	14,717	1,944	55	7.23
Italy	24,990	4,129	154	25.39
Spain	14,583	245	298	5.00
Kingdom of the Serbs, Croats and Slovenes.	17,971	3,962	150	32.97
Russia	*	614	*	2.88

¹For 105 "large towns" only.
Data not received.

Table 71 shows the number of cases of scarlet fever reported from several European countries for the years 1921 and 1922. Five — Czechoslovakia, the Kingdom of the Serbs, Croats and Slovenes, Bulgaria, Sweden and the Norwegian cities—have reported considerably more cases in 1922 than in the year before. The increase in the indicated incidence in these countries is 12%, 18%, 26%, 55% and 90% respectively. Latvia reported 4% higher incidence in 1922 than in 1921:

Although the disease has shown a decidedly increased prevalence in Sweden in the past year, in 1921, the 1922 incidence is about the same as the average of the past ten years. The number reported in the previous year happened to be the lowest for any year for which the records are available (1910-1922). In Italy, there were 10% fewer cases reported in 1922 than in 1921. The same was true in Denmark was the lowest since 1918, the result of a steady decline since 1920, when 12,285 cases were reported. England and Wales reported a drop of 20% from 137,073 cases in 1921 to 107,924 in 1922. The prevalence of scarlet fever in Austria was roughly 40% lower in 1922 than in the preceding year. The same percentage decrease was noted in Switzerland, where the 1922 incidence was about 60% lower than the average for the preceding year period, and 60% below the number of cases reported in 1917.

TABLE 71.

NUMBER OF CASES OF SCARLET FEVER NOTIFIED IN EUROPEAN COUNTRIES IN 1921 AND 1922

Country	1921	Cases 1922
Austria	4,210	2,660
Belgium	1,588	1,514
Bulgaria	5,645	7,185
Czechoslovakia	9,575	10,785
Danzig	214	135
Denmark	6,471	5,110
England and Wales	137,073	107,924
Estonia	1,393	594
Finland	1,320	990
Germany	48,704	32,443
Italy	11,079	10,532
Latvia	1,532	1,598
Lithuania	752	437
Netherlands	4,045	3,301
Norway (cities only)	479	912
Poland	28,106	14,717
Kingdom of the Serbs, Croats and Slovenes	15,241	17,971
Sweden	6,939	10,710
Switzerland	3,733	2,270
Russia, by divisions:		
Western	12,048	5,441
Northern	6,528	2,660
Central	27,636	15,556
South-Central	7,468	5,466
Southern	2,217	2,376
Crimea	1,084	785

TABLE 71 (continued).

Country	1921	Cases 1922
Middle Volga	8,975	9,737
Eastern	8,053	3,681
Ukraine	33,263	18,325

In the Netherlands, the 1922 rate was 18% below that of 1921, which was previously the lowest in the period since 1911. In 1922, there were approximately one-fourth the number of cases in each of the two years 1918 and 1919, when scarlet fever was particularly prevalent. Finland in 1922 an incidence rate much lower than for any year for which the reports are at hand (1922). After three years, during which the incidence ranged from 3,000 to 3,500 cases per year, and increase, to almost 8,000 cases, occurred in 1918 and continued throughout the most of the year. The next year, less than 2,000 cases were reported, and in 1922 there were less than half that number. In each of the subdivisions of Russia, scarlet fever incidence has been apparently very considerably less in 1922 than in 1920 or 1921, during which years it is believed that this disease showed a greater prevalence than in the years immediately preceding.

Examination of the following table, No. 72, which gives the indicated monthly incidence rates in different countries, shows that there is a definite upward tendency of scarlet fever in Sweden toward the end of the year. A similar tendency is shown in the Norwegian cities, Bulgaria and the Kingdom of the Serbs, Croats and Slovenes. All the other countries have indicated practically stationary incidence rates. There is nothing remarkable about the seasonal variations of this disease in any of the countries considered.

TABLE 72.

MONTHLY INCIDENCE RATES OF SCARLET FEVER IN EUROPEAN COUNTRIES FOR 1922, BY MONTHS.

Annual Rate per 100,000 Population in Specified Periods.

Country	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Denmark	19	26	17	18	16	16	17	22	13	22	29	24
Estonia	144	89	70	61	60	63	82	123	203	290	324	271
Czechoslovakia	106	77	70	63	69	84	59	52	68	106	107	92
Sweden	216	179	145	132	124	125	127	140	127	154	232	165
Bulgaria	47	38	46	26	28	14	2.7	26	26	26	65	63
Poland	41	46	46	35	30	30	22	15	13	17	33	31
Romania	374	197	171	138	134	125	107	126	170	189	157	127
Yugoslavia	149	151	132	116	92	95	64	33	45	87	96	123
Finland	41	35	26	15	13	15	15	5.2	10	23	8.3	3.8
Norway	42	44	40	38	38	33	44	33	55	64	81	69
Latvia	90	151	111	130	99	113	63	71	99	138	184	150
Albania	232	170	133	116	126	147	99	121	170	167	200	167
Kingdom of the Serbs, Croats and Slovenes												
Croatia	244	127	81	91	90	107	97	128	177	236	215	228
Slovenia	154	136	147	144	147	158	116	101	141	282	397	254
Serbia	85	82	63	42	36	33	30	30	41	58	59	50
Montenegro	154	120	76	77	52	45	39	36	67	82	48	68

Monthly data received is a combination of weekly reports, with five weeks in March, May, August and September, and four weeks in the other months.

TABLE 72 (continued).

Weekly Reports combined into Thirteen Periods of Four Weeks¹.

	Jan. 1-28	Jan.29 Feb.25	Feb.26 Mar.25	Mar.26 Apr.22	Apr.23 May20	May21 Je.17	Je.18 Jy.15	Jy.16 Aug.12	Aug.13 Sept.9	Sept.10 Oct. 7	Oct.8 Nov. 4	Nov.5 Dec.
Austria	59	34	33	32	37	31	36	26	30	50	61	5
Danzig	67	45	45	26	19	41	11	19	63	33	67	3
England and Wales . .	368	320	285	268	278	244	261	234	214	271	318	34
Germany	69	58	53	42	40	41	44	41	52	72	69	7
Italy	33	21	29	24	20	25	24	23	22	33	26	4
Poland	84	60	59	46	46	41	49	44	47	67	68	6
Switzerland	232	80	69	50	39	39	38	27	31	34	30	5

¹ For countries for which monthly data are not available.

DIPHTHERIA.

extent to which notifications of diphtheria are made varies, no doubt, considerably in the countries, so that it is impossible, except where the incidence is plainly unusual, to make a fair comparison for countries.

The statistics of diphtheria prevalence, therefore, are presented with the full knowledge that they are probably incomplete, and the observations in the following pages have been restricted to a consideration of the chronological variations of the occurrence of the disease in the various countries and the differences in the indicated incidence which are so great as to suggest a real significance. Table 73 gives the number of cases and the corresponding indicated rates of diphtheria incidence per 100,000 population in each of the European countries which reported to the service of Epidemiological Intelligence.

TABLE 73.

INCIDENCE OF DIPHTHERIA IN EUROPEAN COUNTRIES DURING 1922.

Country	No. of cases	Annual rate per 100,000
Austria	2,810	44
Belgium	2,280	30
Bulgaria	786	16
Czechoslovakia	3,244	24
Denmark	7,906	240
Danzig	158	45
England and Wales	52,197	138
Estonia	522	30
Finland	1,941	58
Germany	37,949	64
Hungary	2,655	34
Italy	10,523	27
Latvia	698	43
Lithuania	292	12
Netherlands	4,740	69
Norway (cities only)	843	107
Poland	4,228	16
Roumania	1,469	9
Scotland	7,371	150
Kingdom of the Serbs, Croats and Slovenes	1,777	15
Sweden	6,548	111
Switzerland	4,409	114
Russia ¹	36,771	28

¹ Includes figures for waterways, railways and prisons.

TABLE 73 (continued).

Country	No. of cases	Annual rate per 100,000
Russia: by Divisions:		
Western	3,392	37
Northern	501	12
Central	6,537	44
South-Central	2,971	26
Ukraine	13,069	50
Southern	1,734	18
Crimea	265	35
Middle Volga	4,718	31
Eastern	2,366	19
Kirghiz Republic	919	18
Turkestan	191	2.7

The prevalence of this disease, as indicated by the reports from the several countries, presents a picture quite the reverse of that for enteric fever, typhus, cholera and dysentery. Whereas these other diseases had in general their greatest prevalence in Russia and the other countries, diphtheria had its highest incidence in the north-west, shading off toward the south. The country of highest reported incidence of this disease in 1922 appears to have been Iceland, where the rate for the year averaged about 240 per 100,000 population. Norway, Sweden, England, Wales and Switzerland are the other countries reporting an annual incidence rate for diphtheria in excess of 100. Finland, Germany and the Netherlands form a third group of somewhat lower incidence with rates over 50 but less than 100. All the other countries furnished data indicating a prevalence during the year of less than 50 cases per 100,000. In this category, there are two well-defined groups in which rates falling between 25 and 50 are indicated; the first including Italy, Austria and Hungary and the second, the Ukraine, Crimea, the Western, Central and Middle Volga Divisions of Russia as well as Latvia and Esthonia. Belgium is the only country in north-western Europe to report rates below 50. Lithuania, Poland, Czechoslovakia, the Kingdom of the Serbs, Croats and Slovenes, and the northern, eastern and southern regions of Russia have reported comparatively low rates, between 10 and 25. Roumania is alone in reporting the prevalence of diphtheria during 1922 at a rate of less than 10 cases per 100,000 inhabitants.

Figures for both the morbidity and mortality due to diphtheria are lacking for Albania, Greece, and Portugal. In the absence of an official report on diphtheria incidence in Spain during 1922, resort has been had to a method of estimating the probable number of cases on the basis of the mortality given in Table 74, and the average ratio of cases to deaths in the twelve countries which reported both incidence and mortality for the year. In these countries, the indicated ratio ranged from 4.5 to 16.2 % of the cases, with a weighted mean of 8.3 %. If it is estimated that the average ratio which prevailed in Spain, there were about 34,000 cases of diphtheria in that country during 1922 at an incidence rate of about 160 per 100,000. The mortality statistics are shown in Table 74.

Diphtheria has been far less prevalent in Europe, with the exception of Poland, Crimea and possibly Lithuania. These countries have reported a few more cases during 1922 than 1921. This is shown in Table No. 75, which shows the numbers of cases reported from those countries for which data for the two years are available.

TABLE 74.

NUMBER OF CASES OF AND DEATHS FROM DIPHTHERIA IN CERTAIN EUROPEAN COUNTRIES
DURING 1922, AND RATES PER 100,000 POPULATION.

Country	Number cases	reported of deaths	Rate per cases	100,000 deaths
Austria	2,810	215	44	3.4
Bulgaria	786	107	16	2.2
Czechoslovakia	3,244	277	24	2.0
Danzig	158	7	45	2.0
England and Wales (105 large towns)	34,096	2,557	179	13.4
Hungary	2,655	295	34	3.8
Lithuania	292	15	12	0.6
Netherlands	4,740	309	69	4.5
Norway (cities only)	843	30	107	3.8
Poland	4,228	414	16	1.5
Roumania	1,469	218	9	1.3
Scotland	7,371	536	150	10.9
Kingdom of the Serbs, Croats and Slovenes	1,777	288	15	2.4
Spain	*	2,822	*	13.3

TABLE 75.

NUMBER OF CASES OF DIPHTHERIA NOTIFIED IN EUROPEAN COUNTRIES IN 1921 AND 1922.

Country	1921	1922
Austria	3,921	2,810
Belgium	3,914	2,280
Bulgaria	1,080	786
Czechoslovakia	4,331	3,241
Denmark	8,460	7,906
Danzig	284	158
England and Wales	66,506	52,197
Estonia	771	522
Finland	3,750	1,941
Germany	63,305	37,949
Italy	12,081	10,523
Latvia	964	698
Lithuania	284	292
Netherlands	7,575	4,740
Norway (cities only)	1,933	843
Poland	4,097	4,228
Roumania	2,992	1,469

ata not received.

TABLE 75 (continued).

Country	1921	1922
Kingdom of the Serbs, Croats and Slovenes	2,667	1,777
Sweden	12,286	6,548
Switzerland	7,702	4,409
Russia, by divisions:		
Western	4,603	3,392
Northern	1,096	501
Central	8,037	6,537
South-Central	2,844	2,971
Ukraine	14,516	13,069
Southern	805	1,734
Crimea	189	265
Middle Volga	4,055	4,718
Eastern	3,016	2,366
Kirghiz Republic	—	919
Turkestan	568	191

In those countries for which earlier data are available, it appears that, with the exceptions already mentioned, diphtheria incidence reached a peak in the period 1918-1920 and has been steadily decreasing ever since. The Netherlands reported 13,328 cases in 1918, the highest in that country for the past ten years, but the number of cases in 1922, 4,740, is lower than for any of the years of the past ten years. Diphtheria in Finland displayed a definite rising tendency from 1915 to 1919, after which a sharp decline set in, the 1922 figures being considerably lower than those for 1915. A similar tendency was experienced in Sweden. After rising steadily from 1915, a maximum was reached in 1919, when more than 40,514 cases were reported. This was followed by a marked decline, and the incidence for 1922 was less than one-sixth that of 1919. In Denmark and England and Wales, this wave was highest in 1920, but the increase in the few years immediately preceding it was not so marked. The decrease in the subsequent period were more marked in the former than in the latter country. The 1922 incidence for Switzerland is much lower than for the previous five years, this 1922 figure being slightly over one-half that of 1918 or 1920. Russia, Austria and the Kingdom of the Serbs, Croats and Slovenes have reported diphtheria rates for 1922 from 25 % to 50 % lower than in 1920. The incidence of this disease reached a maximum in these countries.

Table 76 shows the seasonal distribution of diphtheria for those European countries for which data are available by monthly or four-week periods. As would be expected from the general incidence rates, the indicated incidence in Denmark has been uniformly higher than in any other country for consideration. A sharp decline in the rate from about 400 in January down to about 150 in February, followed by an equally rapid rise, which reached about 320 in November but fell off to 300 in December. No other European country has shown such wide seasonal variations in diphtheria incidence, most of them presenting the usual picture of a moderate downward tendency from January or February to August with slightly rising rates thereafter to the end of the year. The general trend of the incidence during the year has been downward, almost without exception.

TABLE 76.

INDICATED INCIDENCE OF DIPHTHERIA IN EUROPEAN COUNTRIES IN 1922, BY MONTHS

Annual Rate per 100,000 in Specified Periods.

Country	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Albania . . .	45	40	30	29	32	26	25	24	21	24	31	32
Armenia	17	21	25	12	8.2	7.0	6.5	12	15	20	32	18
Bulgaria	395	286	289	203	180	156	154	161	194	245	323	301
Czechoslovakia . .	34	30	27	22	21	19	14	17	21	29	29	24
Estonia	35	47	34	30	20	25	16	35	21	30	24	42
Finland	69	92	69	54	47	33	43	44	53	67	74	57
France	53	35	38	28	30	26	21	34	29	31	43	37
Germany	43	77	61	38	48	33	31	31	45	35	38	36
Greece	13	19	13	19	12	11	9.4	14	5.8	9.4	9.3	5.7
Iceland	91	84	82	66	66	68	52	47	60	66	75	77
Ireland	133	116	114	98	129	65	57	96	121	153	118	88
Italy	12	11	9.5	7.0	7.6	7.7	5.8	8.5	10	8.5	12	9.0
Kingdom of the Netherlands, Croats and Slovenes ¹ .	29	16	9.8	12	12	13	8.4	9.0	15	18	14	27
Lithuania	162	126	112	93	105	103	76	90	115	110	135	105
Latvia	37	36	32	28	24	22	23	20	25	18	18	13
Poland	76	74	57	55	45	36	42	33	55	62	37	41

Weekly Reports combined into Thirteen Periods of Four Weeks².

	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 April 22	April 23 May 20	May 21 June 19	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2	Dec. 3-30
Albania	62	45	48	41	46	39	38	29	30	41	46	60	45
Armenia	30	52	33	30	48	19	48	56	11	67	67	59	67
Bulgaria and Macedonia	191	179	156	136	127	120	127	114	104	127	137	140	140
Czechoslovakia	89	79	75	60	58	54	55	46	53	62	66	70	71
Estonia	45	35	33	25	24	22	18	17	26	26	25	31	28
Finland	18	19	22	16	15	11	12	11	11	16	20	18	16
Iceland	215	150	124	114	94	82	88	66	86	113	131	112	107

Monthly figures received are combinations of weekly data, with five weeks in the months of March, August, and November, and four weeks in the other months.

¹For those countries for which summaries by calendar months are not available.

INFLUENZA.

Reports on the notifications of influenza are available for nine European countries. The reports cannot, of course, be interpreted as showing the comparative prevalence of the disease in the several countries. They are of interest chiefly as showing the time when epidemics of the disease occurred. In order to supplement the fragmentary data on notifications of cases, a table is introduced showing the mortality from "influenza" in a number of European cities during 1922. It is also noted that the number of deaths registered as due to "influenza" do not indicate accurately the total amount of mortality from that disease, but it is probable that they suggest roughly the comparative severity of the epidemics in the different cities and groups of cities and show quite clearly the periods of prevalence. Unfortunately, data relating to mortality from the pneumonias, acute bronchitis, and other acute respiratory affections were not available for these cities, since their inclusion along with influenza would have permitted a more accurate picture of the prevalence of the last-named disease.

The number of cases of influenza notified in the nine countries during 1922 is shown in the following table, together with the indicated rates of incidence:

TABLE 77.

REPORTED INCIDENCE OF INFLUENZA IN CERTAIN EUROPEAN COUNTRIES DURING 1922.

Country	Number of cases	Rate per 100,000
Denmark	237,316	7,215
Finland	55,061	1,652
Latvia	216	13
Lithuania	1,858*	—
Norway (cities only)	51,704	6,586
Russia (European, excluding the Ukraine)	274,321	351
Kingdom of the Serbs, Croats and Slovenes	26,527	221
Sweden	92,671	1,570
Switzerland.	60,235	1,552

The figures for Denmark indicate that a rather severe outbreak occurred in that country during 1922. Judging from the number of notifications, the 1922 epidemic in Denmark was slightly greater than in 1918 and about half as great as the 1918 epidemic. The statistics for Norway should not be compared with those of Denmark because only urban areas are included for Norway, but they indicate a considerable prevalence of the disease. As regards the reports for Finland, the Kingdom of the Serbs, Croats and Slovenes, Sweden, and Switzerland, it may be noted that the occurrence of definite outbreaks of influenza, or an infection or infections resembling influenza in clinical aspects, occurred in all these countries during 1922.

* For January and February only.

outbreaks were more widespread in 1922 than in 1921 in the three countries for which reports of years are at hand, as shown by the following figures:

TABLE 78.

NUMBER OF CASES OF INFLUENZA REPORTED IN 1921 AND 1922.

Country	1921	1922
Finland	44,842	55,061
Norway (cities only)	5,379	51,704
Switzerland.	2,058	60,235

winter was the period of greatest prevalence in all of the countries for which seasonal data are available. The following indicated rates are based on the figures already published in *Epidemiological Report* No. 6, with certain additions:

TABLE 79.

REPORTED INCIDENCE RATES OF INFLUENZA IN CERTAIN EUROPEAN COUNTRIES IN 1922, BY MONTHS.

Annual Rate per 100,000 Population in Specified Periods.

Country	Monthly Reports											
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Denmark	48333	27828	3919	2276	1379	556	308	327	393	498	811	1152
Sweden	5053	3690	3596	2610	723	249	182	254	371	726	1224	1279
Norway	47	72	4.3	2.2	—	—	20	2.9	—	—	—	15
Finland	341	591	—	—	—	—	—	—	—	—	—	—
Switzerland	56104	15167	1809	832	471	344	167	209	370	497	997	2134
Germany (Prussia and the Rhine Province)												
Croatia												
Yugoslavia												
Poland												
Italy												
France												
Spain												
Portugal												
Greece												
Turkey												
Japan												
China												
India												
Australia												
South Africa												
South America												
Central America												
Caribbean												
Polynesia												
Other												

Weekly Reports combined into Thirteen Periods of Four Weeks.

	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 Je. 17	Je. 18 Jy. 15	Jy. 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	Nov. 5 Dec. 2	Dec. 3-30
Denmark	7627	9725	2487	237	38	13	4.7	2.0	4.7	6.1	16	41	37

season of greatest prevalence is also shown in the statistics of mortality from influenza in cities, which have been reproduced in part from the figures already published in *Epidemiological Report* No. 6, with the addition of more complete statistics for the German and English cities, p. 80.

TABLE 80.

DEATHS FROM INFLUENZA IN 1922 IN CERTAIN EUROPEAN CITIES.

Week ending		Germany ¹	England and Wales ²	Ireland ³	Dublin	Glasgow	Antwerp	Amsterdam	Copenhagen	Stockholm	Christiania	Vienna	Prague
January	7	1,024	819	6	28	25	13	1	1	1	2	1	1
"	14	893	1,262	7	28	80	17	13	4	9	3	4	3
"	21	642	1,433	10	13	202	20	37	6	26	21	15	5
"	28	436	1,450	10	14	183	18	81	22	28	25	25	8
February	4	296	1,144	25	16	130	5	63	31	35	12	40	10
"	11	243	759	34	11	48	6	23	29	20	12	34	4
"	18	260	670	61	7	28	—	13	14	13	2	35	4
"	25	227	525	40	9	16	1	9	13	10	10	39	6
March	4	158	306	27	13	16	1	2	12	8	1	23	—
"	11	139	201	26	4	5	1	6	11	5	—	14	2
"	18	81	146	16	9	5	—	5	—	3	—	8	3
"	25	107	104	9	6	2	2	—	5	2	1	7	—
April	1	91	113	2	2	4	—	1	—	—	—	3	—
"	8	97	117	5	6	3	1	—	4	1	—	10	2
"	15	86	109	2	3	2	—	—	2	—	—	6	2
"	22	88	93	1	2	2	2	2	3	—	1	3	1
"	29	67	75	2	3	1	1	3	7	3	1	3	—
May	6	41	69	—	2	1	3	—	7	1	—	2	—
"	13	46	55	3	2	2	1	—	4	—	—	3	—
"	20	33	45	—	1	1	—	—	4	1	—	—	—
"	27	39	55	1	3	1	—	—	3	—	—	—	—
June	3	26	36	1	—	1	—	—	3	—	—	—	—
"	10	32	26	1	—	—	—	1	—	—	—	1	—
"	17	19	27	1	—	1	—	1	—	—	—	—	—
"	24	13	18	1	—	1	—	1	—	1	—	—	—
July	1	18	25	1	—	—	—	—	—	—	—	1	—
"	8	21	22	1	—	—	—	—	1	—	1	—	—
"	15	21	24	—	1	2	—	—	—	—	—	—	—
"	22	15	18	—	—	—	—	—	—	—	—	—	—
"	29	15	22	1	1	—	—	—	—	—	—	—	—

¹ 46 large cities.

² 105 "great towns".

³ 7 towns in Northern Ireland.

TABLE 80 (continued).

Week ending	Germany ¹	England and Wales ²	Ireland ²	Dublin	Glasgow	Antwerp	Amsterdam	Copenhagen	Stockholm	Christiania	Vienna	Prague	Budapest
5	11	19	2	—	1	—	—	—	—	—	—	—	—
12	10	15	2	1	1	—	—	—	—	—	—	—	—
19	10	11	1	1	—	—	—	—	—	—	1	—	—
26	12	16	1	—	—	—	—	—	—	—	—	—	—
ber 2	16	10	6	—	—	—	—	—	—	—	1	—	—
9	14	12	2	—	1	—	—	—	—	—	—	—	—
16	20	18	—	—	—	—	—	—	—	—	—	1	1
23	15	21	1	—	1	—	—	—	—	—	—	2	1
30	17	28	2	—	—	—	1	—	—	—	—	—	1
7	22	32	1	—	2	—	—	2	—	—	—	—	—
14	25	31	1	—	1	—	—	—	—	—	—	—	1
21	34	43	2	—	1	—	—	—	—	—	—	2	—
28	36	41	2	—	2	—	—	1	—	—	—	—	—
ber 4	45	48	—	—	3	—	—	—	—	—	1	1	—
11	83	71	3	1	3	—	—	1	—	—	—	—	—
18	87	64	4	2	2	1	1	—	—	1	—	—	—
25	104	71	2	2	4	1	—	—	—	—	—	1	2
er 2	121	60	—	1	4	—	—	—	—	—	—	—	—
9	172	52	1	3	3	1	1	—	—	—	—	2	—
16	171	68	1	—	2	—	1	1	—	—	—	1	—
23	259	61	2	—	—	—	1	1	—	1	—	1	—
30	298	51	—	—	3	1	1	1	1	—	—	—	4
	6,856	10,611	330	195	796	96	268	193	168	94	280	66	125

Statistics for the cities of Finland are available in greater detail for the period of the epidemic 1921–1922. In the following table, the number of cases reported by weeks from October 30th, 1921, to January 28th, 1922, are shown separately for children under 10 years of age, for troops, and for the remainder of the population:

TABLE 81.

NUMBER OF CASES OF INFLUENZA REPORTED AMONG DIFFERENT GROUPS OF THE POPULATION IN CITIES OF FINLAND, BY WEEKS, OCTOBER 30th, 1921, TO JANUARY 28th, 1922.

Week ending	Troops at Helsingfors	Children under 10 years	Remainder of population	Total
1921				
September 5	12	36	34	82
» 12	60	63	104	227
» 19	68	114	225	407
» 26	55	257	538	850

and ³ See footnotes on previous page.

TABLE 81 (*continued*).

Week ending		Troops at Helsingfors	Children under 10 years	Remainder of population	Total
1921					
December	3	33	294	646	973
»	10	16	244	891	1,151
»	17	21	172	665	858
»	24	7	170	409	586
»	31	16	85	371	472
1922					
January	7	11	42	240	293
»	14	9	42	172	223
»	21	9	43	130	182
»	28	7	37	109	153

The characteristic sharpness in the rise and fall of the curve is quite evident, and of more passing interest is the fact that the epidemic apparently reached its crest first among the troops, among the children, and last among the remainder of the population.

EPIDEMIC DISEASES OF THE CENTRAL NERVOUS SYSTEM.

little data are available on the incidence of cerebro-spinal meningitis, acute poliomyelitis and encephalitis lethargica in 1922 to enable one to make more than a very general comment on their incidence. None of the three diseases, however, reached acute epidemic proportions during the year in any of the countries for which official data have been received.

CEREBRO-SPINAL MENINGITIS.

Cerebro-spinal meningitis, which is notifiable in most of the countries of Europe, showed the highest incidence in Germany and Denmark, where rates of 2.7 and 2.6 per 100,000 population respectively were reported. Another group of countries with rates from 1.5 to 2.0 per 100,000 is formed by Czechoslovakia, Sweden, and the Netherlands. Latvia alone reported a rate between 1.0 and 1.5 per 100,000. Still another and larger group with rates less than 1.0 per 100,000 is composed of England and Wales, Belgium, Norway (urban population only), Esthonia, Lithuania, Hungary, Switzerland, Italy and Bulgaria. These suggested comparisons, however, should not be given much weight because of the extremely doubtful accuracy of diagnoses. In the table below are given the annual incidence for each of the countries reporting in 1922:

TABLE 82.

REPORTED INCIDENCE OF CEREBRO-SPINAL MENINGITIS IN EUROPEAN COUNTRIES IN 1922.

Country	Number of cases	Rate per 100,000
Austria	38	0.59
Belgium	58	0.76
Bulgaria	6	0.12
Czechoslovakia	215	1.6
Denmark	86	2.6
England and Wales	351	0.93
Esthonia	13	0.74
Germany	1,622	2.7
Hungary	48	0.61
Italy	61	0.76
Latvia	22	1.4
Lithuania	20	0.80
Netherlands	132	1.9
Norway (cities only)	6	0.76
Poland	524	2.0
Sweden	93	1.6
Switzerland	30	0.77

In those countries for which figures are at hand for a number of years, the trend of the cerebro-spinal meningitis has been definitely downward since the years 1915-1917, although in the case of certain countries there is some increase in 1922 over the previous year. In England and Wales the highest incidence was in 1915, when 2,566 cases were notified. Since that year there has been a steady decline to a figure of 351 cases for the year 1922. In Denmark the highest incidence since 1914 was in 1916 with 288 cases reported, as against 86 in 1922. In the Netherlands the year of greatest incidence was 1917, with 580 cases, and since 1919 the number of cases has remained at about the same level, from 120 to 130 cases. Similarly, Switzerland showed a relatively high incidence in 1916 with 109 cases, followed by a sharp decline in 1919 to 30 cases, at which level it still remains.

For the other countries, the figures are not at hand for enough years to judge of the trend of cerebro-spinal meningitis during the past decade. In Table 83 the incidence of the disease in 1922 is compared with that of 1921.

TABLE 83.

NUMBER OF CASES OF CEREBRO-SPINAL MENINGITIS IN EUROPEAN COUNTRIES IN 1921 AND 1922

Country	1921	1922
Austria	21	38
Belgium	35	58
Bulgaria	36	6
Czechoslovakia	78	215
England and Wales	411	351
Estonia	8	13
Germany	697	1,622
Italy	81	61
Latvia	31	22
Lithuania	63 ¹	20
Netherlands	120	132
Norway	15	6
Switzerland	32	30

The most striking fact brought out in this table is the increase of cerebro-spinal meningitis in 1922 in Germany and Czechoslovakia, in which countries it apparently was more than twice as prevalent as in 1921. Austria and Belgium also showed a considerable increase. Bulgaria, Denmark and Wales, Italy, Latvia, Lithuania and Norway have reported a lower incidence in 1922 than in 1921.

The seasonal incidence of cerebro-spinal meningitis is shown in Table 84. In both Germany and Denmark, which were the two countries with highest incidence, the greatest number of cases occurred in May. In general, the largest monthly incidence was in May and June or earlier in the spring.

¹ Without November and December.

TABLE 84.

SEASONAL VARIATION IN CEREBRO-SPINAL MENINGITIS IN EUROPEAN COUNTRIES IN 1922.

Annual Rate per 100,000 in Specified Periods.

Country	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Denmark	0.15	1.2	0.46	0.96	0.77	1.3	0.31	0.92	0.96	0.77	0.64	0.77
Finland	—	—	0.24	0.25	—	—	—	—	—	—	—	0.97
Czechoslovakia	0.35	2.0	2.1	2.5	2.0	3.1	1.7	1.2	0.81	1.1	1.1	1.1
France	0.72	3.2	3.9	2.6	5.7	2.6	2.9	2.2	0.37	2.5	2.6	2.1
Germany	2.0	2.2	1.4	0.7	0.67	—	1.4	—	—	—	—	0.67
Italy	3.0	0.5	0.9	0.93	—	0.93	—	0.15	0.16	0.15	—	0.60
Netherlands	—	1.6	2.2	0.75	1.5	2.2	0.72	2.2	2.2	0.72	0.75	1.5
Poland	0.94	1.6	3.3	1.1	1.9	—	—	—	—	—	—	0.47
Sweden	2.4	2.5	1.2	2.3	3.3	2.1	1.6	1.4	0.53	1.4	1.4	3.1
Switzerland	1.5	1.7	—	1.6	1.5	—	—	1.5	—	1.5	—	—
U.S.S.R.	1.0	0.66	1.8	1.7	1.4	2.5	2.6	0.6	0.41	1.6	1.7	3.0

Weekly Reports combined into Thirteen Periods of Four Weeks.

	Jan. 1-28	Jan.29 Feb.25	Feb.26 Mar.25	Mar.26 Apr.22	Apr.23 May 20	May 21 June 17	June 18 July 15	July 16 Aug.12	Aug.13 Sept.9	Sept.10 Oct.7	Oct.8 Nov.4	Nov.8 Dec.2	Dec. 3-30
Denmark	0.41	0.2	0.41	0.61	1.2	0.81	—	0.41	0.61	1.0	0.41	1.0	0.61
Finland	0.93	1.1	1.0	1.5	0.96	0.52	0.96	0.96	0.86	1.0	0.76	0.69	0.76
France	1.7	2.3	3.5	4.0	5.1	3.9	3.5	2.2	2.0	2.0	1.9	1.6	2.2
Germany	0.07	0.10	0.37	0.27	0.3	0.17	0.17	0.07	0.03	0.17	0.07	0.07	0.2
Italy	1.3	1.8	3.7	2.8	1.8	2.2	2.0	2.2	1.8	1.3	1.3	1.3	2.0
Netherlands	0.67	2.0	1.0	0.67	0.67	—	0.33	—	1.3	0.67	—	1.0	1.7

POLIOMYELITIS.

Eight countries reported cases of poliomyelitis currently during 1922. The total cases and annual rates for each country are given in the table below:

TABLE 85.

REPORTED INCIDENCE OF ACUTE POLIOMYELITIS IN CERTAIN EUROPEAN COUNTRIES IN 1922.

Country	Number of cases	Rate per 100,000
Austria	13	0.20
Denmark	60	1.8
England and Wales	354	0.93
Finland	31	0.93
Germany	591	1.0
Norway	5	0.64
Sweden	112	1.9
Switzerland	65	1.7

Sweden, Denmark, and Switzerland were the countries with highest reported incidence, rates per 100,000 population of 1.9, 1.8 and 1.7 respectively. Germany, England and Wales, Finland form another group, with rates of 1.0, 0.93, 0.93 per 100,000. In the cities of Norway rate of 0.64 was indicated and in Austria only 0.20 per 100,000.

In Germany and Finland there was a marked increase in 1922 over 1921, though the number of cases did not reach epidemic proportions. Denmark, England and Wales, and Switzerland showed a decline in 1922. The number of cases for the two years in each country are shown below:

TABLE 86.

NUMBER OF CASES OF ACUTE POLIOMYELITIS IN CERTAIN EUROPEAN COUNTRIES IN 1921 AND 1922

Country	Number of cases	
	1921	1922
Austria	14	13
Denmark	68	60
England and Wales	488	354
Finland	17	31
Germany	350	591
Norway	3	5
Switzerland.	72	65

The seasonal incidence is given in Table 87. No synchronous movement of the disease is to be indicated.

TABLE 87.

REPORTED INCIDENCE OF ACUTE POLIOMYELITIS IN EUROPEAN COUNTRIES IN 1922, BY MONTHS

Country	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.
Denmark.	1.4	3.2	0.4	1.5	1.07	0.7	1.07	4.3	3.7	2.1	1.4
Finland	0.35	1.6	0.35	2.19	0.35	—	3.2	0.7	0.7	0.35	0.4
Norway	—	—	—	1.5	—	—	3.0	—	—	1.49	0.5
Sweden	1.2	1.1	0.8	1.0	1.0	1.85	1.99	2.8	2.68	3.99	3.8

Weekly Reports combined into Thirteen Periods of Four Weeks.

Country	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 June 17	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	N. D.
Austria.	—	—	0.2	—	—	0.2	0.61	—	8.12	0.2	0.61	—
England and Wales	0.89	0.52	0.38	0.41	0.58	0.34	0.72	1.31	1.24	1.79	1.72	0.6
Germany	0.24	0.31	0.44	0.29	0.02	0.31	0.24	0.68	3.02	2.60	2.22	0.0
Switzerland	1.0	—	—	0.3	0.7	1.0	1.0	3.4	2.0	3.0	3.4	0.0

ENCEPHALITIS LETHARGICA.

ification of cases of encephalitis lethargica has been compulsory only in the last two or three and is still not general in all the countries of Europe. This disease, which caused widespread because of several severe outbreaks in 1920 and 1921, apparently was much less prevalent than in either of those years in each of the nine countries for which reports are at hand. Incidence during the past three years is given in Table 88.

TABLE 88.

INCIDENCE OF ENCEPHALITIS LETHARGICA IN CERTAIN EUROPEAN COUNTRIES IN 1920, 1921 AND 1922.

Country	1920		1921		1922	
	Number of cases	Rate per 100,000	Number of cases	Rate per 100,000	Number of cases	Rate per 100,000
Denmark	17	0.22	243	3.2	27	0.35
Finland	194	5.9	135	4.1	39	1.2
Ireland and Wales	890	2.3	1,470	3.9	463	1.2
Norway	?	?	9	0.51	0	—
Sweden	239	7.2	998	30	46	1.4
Switzerland	?	—	6	0.37	4	0.25
Germany (cities).	9	1.1	55	7.0	7	0.89
Poland	136	2.3	1,504	25.5	161	2.7
Netherlands	984	25.4	154	4.0	62	1.6

Seasonal distribution of the disease in the few countries for which data are available is shown in the following table:

TABLE 89.

INCIDENCE OF ENCEPHALITIS LETHARGICA IN EUROPEAN COUNTRIES IN 1922, BY MONTHS.

Annual Rate per 100,000 in Specified Periods.

Country	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Denmark	0.46	—	0.31	0.32	0.31	0.48	0.31	0.31	0.32	0.46	0.32	0.62
Finland	2.86	1.59	1.43	1.48	1.43	0.37	2.15	0.72	0.37	—	0.74	1.07
Ireland and Wales	2.83	6.26	2.83	2.19	0.71	0.37	0.35	—	0.37	0.35	0.37	0.35
Norway	—	0.80	0.72	1.60	—	—	—	—	—	—	—	—
Sweden	1.50	—	3.00	1.55	—	—	—	—	—	1.50	3.32	—
Switzerland	2.79	1.77	3.19	1.24	2.59	1.44	0.80	3.79	1.03	1.00	3.92	8.97

TABLE 89 (Continued).

Weekly Reports combined into Thirteen Periods of Four Weeks.

	Jan. 1-28	Jan. 29 Feb. 25	Feb. 26 Mar. 25	Mar. 26 Apr. 22	Apr. 23 May 20	May 21 June 17	June 18 July 15	July 16 Aug. 12	Aug. 13 Sept. 9	Sept. 10 Oct. 7	Oct. 8 Nov. 4	No. Dec. 2
England and Wales	0.79	1.6	1.9	2.0	1.5	1.5	0.55	0.89	1.4	0.9	0.8	1
Switzerland . . .	2.4	1.7	4.4	3.4	2.0	0.30	0.30	0.30	0.7	0.7	1.7	1

Annexe I.

TOTAL DES CAS DE MALADIES NOTIFIÉS EN EUROPE EN 1922.

*Les périodes sont celles indiquées dans les rapports officiels d'après lesquels
les statistiques sont faites.*

NUMBER OF CASES OF DISEASES NOTIFIED IN EUROPEAN COUNTRIES DURING 1922.

*The periods are those appearing in the official reports from which
the statistics are compiled.*

1. Allemagne. — Germany.

Source: VERÖFFENTLICHUNGEN DES REICHSGESUNDHEITSAMTS, BERLIN.

Semaine finissant Week ended	Anthrax	Diphthérie Diphtheria	Dysenterie Dysentery	Fièvre récurrente Relapsing Fever	Fièvre typhoïde et paratyph. Enteric Fever	Méningite cérébro-spinale Cerebro-spin. Meningitis	Poliomyélite Poliomyelitis	Rage humaine Rabies	Scarlatine Scarlet Fever	Typhus exanthématique Typhus
TOTAL 1922 .	125	37949	5036	31	10993	1622	591	75	32443	381
Janv.-Jan. 7	—	984	47	1	144	15	—	—	821	90
14	3	1105	78	1	163	18	6	—	911	61
21	—	999	48	—	121	24	2	—	743	19
28	2	947	37	—	155	19	3	2	650	59
Févr.-Febr. 4	2	952	62	—	141	26	5	1	644	11
11	—	959	64	1	141	22	—	—	691	1
18	1	854	60	—	148	26	1	1	638	9
25	2	821	43	—	123	32	8	3	641	5
Mars-March 4	2	802	43	—	140	35	3	4	638	6
11	2	899	63	1	140	50	4	2	579	7
18	—	919	55	1	206	37	7	—	642	2
25	1	774	66	1	173	35	6	1	552	12
Avril-April 1	3	750	61	2	136	44	4	—	501	—
8	2	708	41	1	133	38	7	—	494	13
15	3	589	61	1	120	44	—	3	446	—
22	6	683	60	1	151	56	2	1	458	7
29	1	630	69	—	128	58	—	—	507	—
Mai-May 6	2	660	114	1	151	66	1	15	452	5
13	5	675	63	—	132	49	—	4	472	—
20	3	670	54	—	151	58	—	1	399	13
27	2	636	108	—	124	49	2	—	432	9
Juin-June 3	1	629	91	—	161	46	3	1	480	6
10	2	596	92	—	227	44	7	—	453	8
17	3	568	94	—	223	38	2	1	489	4
24	1	633	121	3	298	46	—	—	500	3
Juillet-July 1	—	628	120	—	284	44	1	1	476	1
8	—	627	133	—	292	30	7	—	524	3
15	3	589	124	1	312	39	3	—	491	3
22	2	546	146	2	280	21	10	1	474	6
29	2	527	145	—	258	26	6	5	472	3
August 5	1	489	135	—	270	22	9	2	442	3
12	—	533	203	1	255	31	6	1	491	—
19	1	571	283	3	234	19	39	6	528	—
26	6	584	221	—	311	17	28	2	570	—
Sept.-Sept. 2	3	575	220	6	333	27	41	—	603	—
9	6	664	267	—	365	28	29	2	672	—
16	2	667	265	—	322	17	33	—	826	—
23	7	708	185	—	302	21	34	1	806	2
30	3	687	125	—	288	22	25	2	827	—
Oct.-Oct. 7	7	747	130	—	339	29	26	1	798	2
14	5	719	87	—	269	26	16	3	707	—
21	4	729	87	—	252	15	31	—	750	—
28	—	772	77	—	232	20	26	—	821	—
Nov.-Nov. 4	3	778	50	—	241	24	28	2	837	—
11	2	872	58	—	286	15	26	2	808	—
18	2	777	38	—	247	23	22	—	778	—
25	4	730	43	—	222	17	30	—	789	—
Dec.-Dec. 2	4	784	45	—	184	16	14	—	895	—
9	3	838	42	—	180	25	11	1	735	—
16	2	821	47	3	169	25	6	—	798	—
23	3	733	30	—	164	25	7	—	675	—
30	1	811	35	—	172	23	4	1	617	—

2. Angleterre et Pays de Galles. — England and Wales.

WEEKLY RETURN OF BIRTHS AND DEATHS IN ENGLAND AND WALES.

Période finissant Week ended		Diphthérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalit. Lethargica	Fièvre typhoïde et paratyph. Enteric Fever	Méningite cérébro-spinale Cerebro-spinal Meningitis	Poliomyélite Poliomyelitis	Polio-encéphalite Polio-Encephalitis	Scarlatine Scarlet Fever	Typhus exanthématique Typhus	Variole Smallpox
22		52197	1294	463	2460	351	354	34	107924	14	1013
January	7	1412	6	—	40	6	6	—	2876	—	13
	14	1400	18	6	64	8	8	—	2816	—	13
	21	1427	7	6	31	6	6	—	2562	—	19
	28	1298	16	11	30	7	6	—	2435	—	7
February	4	1332	21	7	48	12	3	—	2470	—	18
	11	1289	21	12	27	8	6	—	2337	—	18
	18	1293	17	12	34	7	3	2	2298	—	9
	25	1291	11	15	55	5	3	—	2184	—	15
March	4	1229	23	12	45	13	2	—	2131	—	16
	11	1165	16	11	39	6	3	—	2090	—	8
	18	1067	9	18	60	6	4	2	2111	—	12
	25	1061	11	15	28	5	2	1	1943	—	16
April	1	1083	22	12	34	9	6	—	2059	—	16
	8	1054	19	18	32	12	1	1	2009	9	27
	15	957	18	13	52	13	2	1	1837	1	23
	22	855	15	14	44	10	3	2	1873	2	48
	29	864	36	8	46	4	7	—	1859	—	18
	6	920	16	7	54	8	3	1	2096	—	37
	13	948	21	12	45	9	6	—	2021	—	38
	20	951	18	16	46	7	1	1	2101	—	18
	27	913	22	15	56	4	3	1	1905	—	20
	3	854	11	10	50	5	4	2	1822	—	27
	10	861	7	8	49	2	1	1	1617	—	21
	17	869	31	10	52	4	2	1	1733	1	15
May	24	960	23	5	52	8	7	2	1832	—	11
	1	899	10	2	59	5	7	1	1809	—	11
	8	951	13	8	53	7	5	—	1917	—	26
	15	875	7	1	57	8	2	1	2016	—	13
	22	965	7	5	56	11	6	—	2030	—	21
June	29	855	12	6	53	9	10	—	1674	—	16
	5	764	10	9	39	4	10	1	1650	—	9
	12	713	12	6	36	4	12	—	1438	—	19
	19	739	5	11	35	6	7	—	1523	—	20
	26	725	8	12	48	9	5	—	1480	—	7
July-September	2	759	7	10	56	5	8	2	1541	—	14
	9	789	8	7	43	5	16	—	1679	—	10
	16	877	5	11	57	5	12	1	1758	—	14
	23	911	5	6	64	8	13	—	1917	—	34
	30	915	13	4	69	3	17	1	1998	—	17
October	7	994	19	6	61	14	10	—	2197	—	22
	14	1000	5	6	49	8	10	1	2174	—	35
	21	983	8	5	42	6	11	2	2421	—	8
	28	1058	5	6	66	6	18	—	2291	—	22
November	4	929	12	5	56	2	11	—	2357	—	52
	11	957	7	8	52	7	14	2	2622	—	17
	18	951	15	8	39	2	18	2	2514	—	18
	25	1033	6	7	51	4	5	1	2430	—	21
December	2	1125	10	6	54	7	12	—	2451	1	26
	9	1175	21	4	44	6	4	—	2519	—	25
	16	1024	52	14	38	9	7	1	2442	—	12
	23	976	50	6	37	5	2	—	2044	—	22
	30	902	24	11	33	2	4	—	2015	—	19

3. Autriche. — Austria.

Source: MITTEILUNGEN DES VOLKSGESUNDHEITSAMTS, WIEN.

Semaine finissant Week ended	Anthrax	Diphthérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde et paratyph. Enteric Fever	Méningite cérébro-spinale Cerebro-spinal Meningitis	Paludisme Malaria	Pollomyélite Pollomyelitis	Rage humaine Rabies	Scarlatine Scarlet Fever	Typhus exanthématique Typhus	Varicelle
Total 1922 . . .	13	2810	1196	2304	38	19	13	23	2660	23	
Janv.-Jan.	—	70	21	49	—	—	—	—	83	1	
14	—	76	9	44	1	—	—	—	76	1	
21	—	86	20	35	1	—	—	—	83	1	
28	—	75	14	40	—	1	—	—	47	7	
Févr.-Febr.	—	51	17	18	—	—	—	—	43	—	
4	—	51	17	18	—	—	—	—	47	—	
11	1	71	17	40	—	—	—	—	50	—	
18	—	48	16	14	—	—	—	—	27	2	
25	—	51	14	9	1	—	—	—	43	3	
Mars-March	—	64	18	12	—	—	1	—	50	—	
4	—	67	15	25	—	—	—	—	31	1	
11	—	62	16	31	—	—	—	—	40	—	
18	—	52	16	31	—	—	—	—	40	—	
25	—	55	12	22	2	—	—	—	44	—	
Avril-April	1	53	7	29	2	1	—	1	40	—	
8	—	47	31	33	—	—	—	—	30	1	
15	—	56	14	40	—	—	—	—	43	—	
22	—	46	12	37	1	—	—	1	42	1	
29	1	61	28	26	2	1	—	—	60	—	
Mai-May	6	45	27	36	2	—	—	1	42	1	
13	2	60	23	35	1	1	—	—	38	—	
20	—	59	16	37	1	1	—	1	54	1	
27	—	44	16	32	—	1	—	—	40	1	
Juin-June	—	63	17	42	1	1	1	—	27	1	
3	—	46	26	30	1	3	—	—	29	—	
10	—	46	26	30	1	—	—	—	59	—	
17	—	38	25	44	2	—	—	—	42	1	
24	—	46	26	45	—	1	1	—	38	2	
Juillet-July	1	41	33	57	—	—	—	—	37	—	
8	—	52	21	42	—	—	1	—	33	—	
15	—	50	41	33	—	—	1	—	30	—	
22	—	30	35	55	1	—	—	1	35	—	
29	—	38	70	72	—	—	—	1	31	—	
5	—	38	41	68	1	—	—	—	42	1	
12	2	36	31	81	—	2	—	5	27	—	
19	—	40	71	77	1	—	1	1	41	—	
26	1	37	67	90	1	1	1	7	36	—	
Sept.-Sept.	2	38	54	64	—	—	—	3	56	—	
9	—	31	45	87	1	—	2	—	49	—	
16	1	41	44	94	—	1	—	—	77	—	
23	1	58	16	72	1	1	—	—	63	—	
30	—	49	28	74	4	1	1	1	43	—	
Oct.-Oct.	7	54	4	51	—	1	—	—	112	—	
14	—	51	9	59	—	1	—	—	77	—	
21	—	61	15	48	—	—	1	—	68	—	
28	—	69	14	44	1	—	1	—	84	—	
Nov.-Nov.	4	46	13	27	1	—	1	—	71	—	
11	—	77	10	50	1	—	—	—	65	—	
18	1	61	6	45	2	—	—	—	70	—	
25	2	73	11	38	—	—	—	—	57	—	
Déc.-Dec.	2	85	18	29	2	—	—	—	84	—	
9	—	66	6	37	—	—	—	—	74	—	
16	—	57	8	43	—	—	—	—	50	—	
23	—	48	9	35	1	—	—	—	—	—	
30	—	53	19	27	2	—	—	—	—	—	

Lèpre: 1 décès dans la semaine du 5 au 11 mars et 1 cas dans la semaine du 28 mai au 3 juin
 Leprosy: 1 death in week of March 5th to 11th and 1 new case in week of May 28th to June 3rd

4. Belgique. — Belgium.

ULLETIN DU MINISTÈRE DE L'INTÉRIEUR ET DE L'HYGIÈNE DU ROYAUME DE BELGIQUE.

Décade Decade	Diphthérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encéphalitis Lethargica	Fièvre typhoïde et paratyph. Entéric Fever	Méningite cérébro-spinale Cerebro-spinal meningitis	Scarlatine Scarlet Fever	Typhus exanthématique Typhus	Varicelle Smallpox
R-TOTAL FOR 1922	2280	37	27	1104	58	1514	8	24
January 1-10	90	2	—	10	—	45	—	1
11-20	113	—	—	21	—	42	—	—
21-31	92	1	3	11	1	38	—	1
February 1-10	84	—	—	17	3	55	—	—
11-20	87	—	—	14	2	41	—	—
21-28	64	—	—	22	2	54	—	—
March 1-10	64	1	1	11	1	47	—	1
11-20	57	—	—	20	1	35	—	1
21-31	72	1	1	22	1	31	—	—
April 1-10	67	4	—	23	2	50	—	—
11-20	69	1	1	9	2	26	2	—
21-30	48	1	1	13	2	39	—	1
1-10	72	1	—	15	1	28	1	—
11-20	75	—	2	15	4	50	—	1
21-31	58	—	—	29	—	26	—	—
1-10	60	—	2	12	2	37	—	—
11-20	48	—	—	34	3	30	—	1
21-30	57	3	1	49	3	31	—	—
May 1-10	46	1	2	27	1	23	—	—
11-20	46	—	—	38	—	37	—	—
21-31	67	—	—	33	1	47	—	—
June 1-10	58	—	2	39	3	52	1	—
11-20	28	—	—	53	—	44	1	2
21-31	68	4	—	45	3	45	—	3
July 1-10	40	4	—	32	2	13	1	—
11-20	40	3	—	51	—	28	2	—
21-30	53	3	2	68	4	42	—	1
August 1-10	66	1	2	52	2	41	—	3
11-20	42	2	1	42	1	47	—	1
21-31	48	—	—	40	2	55	—	—
September 1-10	61	—	1	42	1	52	—	—
11-20	48	1	—	44	3	61	—	3
21-30	85	1	1	46	—	69	—	—
October 1-10	60	—	—	31	—	37	—	1
11-20	76	1	—	36	2	53	—	1
21-31	71	1	4	38	3	63	—	2

7. Dantzig. — Danzig.

RAPPORTS DU (REPORTS FROM) GESUNDHEITSVERWALTUNG DER FREIEN STADT DANZIG.

Semaine finissant Week ended		Diphthérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde et paratyph. Enteric Fever	Scarlatine Scarlet Fever	Typhus exanthématique Typhus
FOUR-TOTAL FOR 1922		158	5	76	135	3
January	7	—	—	1	3	—
	14	3	—	4	8	—
	21	3	—	2	4	—
	28	2	—	2	3	2
February	4	1	—	2	5	—
	11	3	—	2	2	—
	18	6	—	3	4	—
	25	4	1	1	1	—
March	4	—	—	—	—	—
	11	4	—	2	4	—
	18	5	—	—	5	—
	25	—	—	1	3	—
April	1	2	—	—	3	—
	8	—	—	—	—	—
	15	5	1	2	2	—
	22	1	—	—	2	—
	29	3	1	1	2	—
	6	5	—	—	2	—
	13	1	—	1	1	—
	20	4	—	4	—	—
	27	2	—	1	5	—
May	3	1	—	—	2	—
	10	1	—	—	4	1
	17	1	—	—	—	—
	24	6	—	1	1	—
June	1	4	—	—	—	—
	8	2	1	—	1	—
	15	1	—	5	1	—
	22	2	—	3	—	—
	29	5	—	2	1	—
July	5	4	—	2	1	—
	12	4	—	2	3	—
	19	—	—	4	1	—
	26	—	—	3	7	—
August-September	2	1	—	1	6	—
	9	2	—	3	3	—
	16	4	—	—	3	—
	23	3	—	2	3	—
	30	8	—	3	—	—
October	7	3	—	2	3	—
	14	3	—	—	2	—
	21	5	—	1	6	—
	28	5	—	1	9	—
November	4	5	—	1	1	—
	11	4	—	3	1	—
	18	3	—	1	5	—
	25	1	—	2	1	—
December	2	8	—	1	3	—
	9	7	—	1	2	—
	16	3	1	2	2	—
	23	3	—	—	3	—
	30	5	—	1	1	—

Varicelle humaine: un cas dans la semaine du 9 au 15 juillet.
Smallpox: one case in week of July 9th-15th.

Varicelle: pas de cas.
Smallpox: no case.

9. Finlande. — Finland.

CONSPECTUS MORBORUM CONTAGIOSORUM IN REPUBLICA FINLANDENSI.

Quinzaines Fortnights	Diphthérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis Letargica	Fièvre typhoïde et paratyph. Enteric Fever	Grippe Influenza	Poliomyélite Poliomyelitis	Scarlatine Scarlet Fever	Variole Smallpox
ANNUAL-TOTAL FOR 1922.	1941	210	46	1297	55061	31	990	90
January 1-15	89	2	—	14	7300	—	40	—
16-31	106	2	8	92	7001	1	77	—
February 1-15	122	2	4	14	4547	—	47	19
16-28	112	—	12	39	4886	4	70	17
March 1-15	93	1	3	19	5189	1	69	13
16-31	102	2	5	38	4988	—	60	16
April 1-15	73	—	2	24	4437	1	53	4
16-30	76	—	4	31	2711	5	43	5
1-15	55	1	—	26	1237	—	41	—
16-31	77	8	2	22	809	1	43	11
1-15	54	4	—	33	478	—	55	1
16-30	36	1	1	9	203	—	28	2
May 1-15	54	11	—	105	218	5	38	1
16-31	67	11	1	67	296	4	23	—
June 1-15	45	20	—	93	271	1	14	—
16-31	80	17	—	124	449	1	28	—
July-September 1-15	60	30	1	103	421	—	17	—
16-30	85	26	—	98	595	2	18	—
October 1-15	81	14	1	82	831	—	20	—
16-31	108	30	—	75	1223	1	28	1
November 1-15	97	11	—	72	1310	1	47	—
16-30	106	5	1	45	2042	3	42	—
December 1-15	79	10	1	38	1830	—	39	—
16-31	84	2	—	34	1789	—	50	—

cas de typhus exanthématique, par courrier de Moscou, a été notifié en janvier et un cas de fièvre récurrente notifié en août.

case of typhus, a courier from Moscow, was notified in January, and one of relapsing fever in August.

11. Italie. — Italy.

Source: BOLLETTINO DELLE MALATTIE INFETTIVE NEL REGNO, ROMA.

Semaine finissant Week Ended	Diphthérie Diphtheria	Dysenterie Dysentery	Fièvre typhoïde et paratyph. Enteric Fever	Méningite cérébro-spinale Cerebro-spinal meningitis	Peste Plague	Rougeole Measles	Scarlatine Scarlet Fever	Varicelle Chicken Pox
TOTAL POUR—TOTAL FOR 1922	10523	1197	22971	61	20	27828	10532	28
Janvier—January 7	321	—	355	—	—	389	303	
14	305	6	259	—	—	595	230	
21	316	8	223	1	—	750	261	
28	391	4	271	1	—	622	192	
Février—February 4	267	—	136	—	—	381	132	
11	250	—	113	—	—	780	169	
18	303	3	194	2	—	505	235	
25	215	—	107	1	—	533	85	
Mars—March 4	233	—	118	2	—	547	195	
11	313	1	112	1	—	556	186	
18	220	4	135	5	—	769	199	
25	203	1	141	3	—	728	271	
Avril—April 1	168	—	148	—	—	628	162	
8	175	—	90	6	—	696	146	
15	255	—	149	2	—	888	272	
22	159	—	132	—	—	674	131	
29	205	—	177	4	—	705	148	
Mai—May 6	173	3	130	1	—	732	165	
13	151	—	143	1	—	1230	129	
20	171	—	168	3	—	1050	167	
27	145	1	151	2	—	779	115	
Juin—June 3	205	2	226	1	—	1156	235	
10	141	7	195	—	—	908	151	
17	165	19	249	2	—	892	235	
24	124	9	291	1	—	702	210	
Juillet—July 1	114	13	289	3	—	627	188	
8	131	36	379	—	1	789	174	
15	156	34	365	1	—	505	161	
22	117	62	496	—	3	589	153	
29	126	63	609	—	2	385	161	
Août—August 5	135	67	718	1	1	461	180	
12	127	50	923	1	2	372	173	
19	143	99	956	—	7	282	101	
26	194	193	942	1	—	189	18	
Septembre—September 2	160	105	1164	—	—	182	17	
9	261	82	1457	—	1	225	17	
16	176	80	990	1	1	193	31	
23	205	60	1343	2	1	195	17	
30	170	30	1348	—	1	212	23	
Octobre—October 7	235	42	951	2	—	355	26	
14	179	27	815	—	—	203	20	
21	163	23	574	2	—	227	23	
28	186	13	737	—	—	442	6	
Novembre—November 4	226	10	629	—	—	316	25	
11	253	22	640	—	—	338	28	
18	235	3	512	—	—	303	26	
25	214	3	386	1	—	370	34	
Décembre—December 2	211	2	354	1	—	214	34	
9	235	7	363	—	—	408	27	
16	219	—	280	—	—	477	37	
23	189	2	162	4	—	348	27	
30	189	1	176	2	—	426	20	

Typhus exanthématique: deux cas ont été déclarés, un cas dans la semaine du 15 au 21 octobre, un cas dans la semaine du 24 au 30 décembre

Typhus: two cases were reported, one in the week October 15th-21th, the other December 24th-30th

SUPPLÉMENT A LA STATISTIQUE ITALIENNE

Avant l'envoi à l'impression du texte et des tableaux de ce rapport, un résumé annuel des maladies déclarées en Italie a été reçu du Ministère italien de l'Intérieur. Ses chiffres révisés, comparés aux totaux des données hebdomadaires, calculés par la section d'hygiène, présentent quelque différence et les totaux révisés sont reproduits ci-dessous.

ADDENDUM ON ITALIAN STATISTICS

Before the text and the tables in this Report were sent to the printers, the annual summary of the diseases in Italy was received from the Italian Ministry of the Interior. The revised figures, compared with some details from the compilations made from the current weekly reports furnished to the Health Section and the revised totals for the year 1922 are given below.

NUMBRE DE CAS DE CERTAINES MALADIES INFECTIEUSES DÉCLARÉS EN ITALIE EN 1922.
NUMBER OF CASES OF CERTAIN INFECTIOUS DISEASES NOTIFIED IN ITALY DURING THE YEAR 1922.

Diphtérie — Diphtheria	11.347
Encéphalite léthargique — Encephalitis lethargica	462
Fièvre typhoïde et paratyphoïde — Enteric Fever	22.971
Méningite cérébro-spinale — Cerebro-spinal Meningitis	66
Paludisme — Malaria	234.656
Rougeole — Measles	46.471
Scarlatine — Scarlet Fever	11.965
Variole — Smallpox	534

12. Lettonie. — Latvia.

Source: CONSPECTUS MORBORUM CONTAGIOSORUM IN REPUBLICA LATVIENSI.

Maladies Diseases	Total 1922	Janvier Jan.	Février Febr.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Sept. Sept.	Octobre Oct.	Nov. Nov.	Déc. Dec.
Anthrax	7	—	2	—	—	—	2	—	1	1	1	—	—
Anthrax													
Diphtérie	698	60	96	85	51	66	44	43	43	60	49	51	50
Diphtérie													
Dysenterie	913	4	2	2	4	9	24	137	397	246	70	16	2
Dysenterie													
Encephalite léthargique	4	—	1	1	2	—	—	—	—	—	—	—	—
Encephalitis lethargica													
Fievre recurrente	116	28	7	8	12	12	16	14	7	4	4	3	1
Relapsing fever													
Fievre typhoïde et paratyphoïde	1011	112	62	48	47	63	57	109	134	110	113	102	54
Enteric fever													
Grippe	216	65	90	6	3	—	—	27	4	—	—	—	21
Influenza													
Lèpre	24	4	2	2	1	3	5	2	—	1	1	1	2
Lèpre													
Méningite cérébro-spinale	22	—	2	3	1	2	3	1	3	3	1	1	2
Cerebro-spinal meningitis													
Paludisme	57	—	1	5	—	20	7	13	4	5	1	—	1
Malaria													
Rougeole	715	131	176	173	71	53	33	19	8	10	14	12	15
Measles													
Scarlatine	1598	206	188	183	155	127	127	88	46	60	120	128	170
Scarlet fever													
Typhus exanthématique	1480	288	178	212	275	249	111	48	26	19	19	26	29
Typhus													
Variole													
Smallpox	160	22	16	16	24	30	21	5	15	4	1	5	1

16. Pologne. — Poland.

BULLETIN OFFICIEL POLONAIS DU MINISTÈRE DE LA SANTÉ PUBLIQUE.

	Anthrax Anthrax	Choléra asiatique Asiatic Cholera	Diphthérie Diphtheria	Dysenterie Dysentery	Fievre récurrente Relapsing Fever	Fievre typhoïde et paratyph. Enteric Fever	Méningite cérébro-spinale Cerebro-spinal Meningitis	Paludisme Malaria	Rougeole Measles	Rage humaine Rabies	Scarlatine Scarlet Fever	Typhus exanthématique Typhus	Variole Smallpox
AL 1922	56	121	4228	14335	40245	21241	524	17419	23830	1937	14717	40792	2327
January 7	2	—	132	114	1975	726	7	27	434	30	443	1377	51
14	—	—	71	39	1535	455	4	6	477	34	441	1663	81
21	—	—	79	33	1423	596	7	2	387	43	457	1490	45
28	—	—	86	44	1366	485	9	18	413	47	396	1932	42
br. 4	—	1	104	45	1870	541	6	20	514	42	335	1437	57
11	—	—	101	109	3165	523	9	56	609	27	290	1740	65
18	—	—	91	38	2103	395	11	26	350	25	307	2077	45
25	—	—	96	51	2090	380	11	43	460	37	296	1787	30
rch 4	—	—	93	46	1690	435	22	163	297	50	253	1888	31
11	1	—	151	34	1926	463	19	118	433	24	394	1787	60
18	1	—	107	34	1787	424	26	199	502	28	238	1629	88
25	—	—	108	57	1358	338	9	205	483	25	339	1525	82
ril 1	—	—	87	27	1643	426	14	215	563	26	311	1758	139
8	1	—	114	36	1224	475	13	310	514	38	238	1458	150
15	—	—	54	39	1038	321	9	245	257	35	199	1150	71
22	—	—	68	33	849	318	21	426	284	43	209	1365	108
29	—	—	90	33	849	311	6	427	391	71	259	1359	117
6	—	—	67	25	749	362	11	430	415	36	227	1452	111
13	—	—	76	36	804	369	7	520	517	47	217	1245	80
20	—	—	74	75	830	323	12	775	739	57	241	1232	108
27	—	—	51	43	553	285	7	981	719	42	182	1024	67
te 3	2	—	64	60	630	294	19	820	743	40	195	866	71
10	—	—	62	63	708	252	10	920	651	49	218	886	71
17	—	3	49	54	695	289	10	834	503	44	246	750	72
24	—	5	62	92	570	269	6	990	536	45	251	588	45
uly 1	1	—	56	98	538	221	9	858	328	31	200	625	30
8	2	11	80	164	478	237	14	700	332	28	259	369	28
15	9	8	59	255	408	263	12	667	357	75	290	363	33
22	3	12	61	440	532	278	14	865	392	50	245	261	46
29	5	10	48	778	303	285	9	759	352	30	207	227	25
3. 5	2	31	61	936	326	330	12	662	195	41	225	195	29
12	1	32	49	1097	340	371	11	546	206	71	234	176	21
19	5	6	53	1563	355	437	13	593	145	46	238	158	20
26	4	2	55	1649	291	442	10	360	189	57	243	124	14
pt. 2	1	—	78	1331	222	543	11	355	181	40	224	101	7
9	2	—	46	1157	211	567	4	314	218	38	261	116	9
16	—	—	77	1029	203	711	9	256	275	42	351	119	17
23	—	—	73	802	192	705	7	238	273	32	346	131	13
30	—	—	94	555	218	691	5	227	302	40	358	95	14
Oct. 7	—	—	91	333	212	600	5	191	318	30	332	119	13
14	1	—	92	236	174	570	5	173	599	30	350	131	6
21	4	—	100	178	182	588	6	165	474	18	385	131	9
28	—	—	109	116	157	401	5	67	675	23	326	134	20
v. 4	1	—	109	64	207	475	10	141	449	17	337	132	6
11	1	—	105	69	146	377	7	99	500	37	352	149	7
18	1	—	86	69	187	377	6	103	772	37	280	219	10
25	2	—	84	30	160	310	6	63	849	19	298	219	20
2	2	—	97	34	158	300	7	54	770	26	303	181	12
9	—	—	73	21	195	289	6	49	822	24	297	223	18
16	2	—	96	29	145	270	14	52	839	17	224	199	4
23	—	—	88	20	148	256	11	47	396	33	193	179	7
30	—	—	71	22	127	292	11	39	431	20	177	251	2

17. Royaume des Serbes, Croates et Slovènes. *
17. Kingdom of the Serbs, Croats and Slovenes. *

Source: BULLETIN MENSUEL DU MINISTÈRE DE LA SANTÉ PUBLIQUE, BELGRADE.

Maladies Diseases	Total 1922	Janvier Jan.	Février Febr.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Septembre Sept.	Octobre Oct.	Novemb. Nov.	Déc. Dec.
Diphthérie	1777	266	143	113	107	137	122	77	104	135	168	160	245
Diphtheria													
Dysenterie	2878	61	38	39	29	62	108	407	952	660	290	177	55
Dysentery													
Fièvre récurrente	21	—	—	3	1	2	2	3	5	1	—	2	2
Relapsing fever													
Fièvre typhoïde et paratyphoïde	3868	279	131	108	80	160	92	207	533	754	659	578	287
Enteric fever													
Grippe	26527	6279	13173	4851	1037	306	67	109	78	168	91	188	180
Influenza													
Paludisme	16327	494	411	467	553	967	1249	2041	5199	2602	1744	562	38
Malaria													
Rougeole	5085	946	562	480	544	931	606	179	89	64	146	312	226
Measles													
Scarlatine	17971	2247	1174	932	843	1033	986	894	1478	1633	2171	2482	2098
Scarlet fever													
Typhus exanthématique	232	42	20	27	28	54	13	5	1	3	6	10	23
Typhus													
Variole	725	48	47	103	86	93	58	32	31	19	45	75	88
Smallpox													

* Les mois de mars, mai, août et novembre contiennent les données pour cinq semaines, les autres mois pour quatre semaines.
* The months of March, May August and November contain data for five weeks, the other months for four weeks.

18. Suède. — Sweden.

TABLEAU RÉSUMÉ DES RAPPORTS RELATIFS AUX ÉPIDÉMIES.

Quinzaines Fortnights	Diphthérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvre typhoïde et paratyph. Enteric fever	Grippe Influenza	Méningite cérébro-spinale Meningitis cerebro-spinal	Poliomyélite Poliomyelitis	Scarlatine Scarlet fever
R-TOTAL FOR 1922	6548	69	161	911	92671	93	112	10710
January 1-15	394	4	11	60	7777	2	4	358
January 16-31	418	19	3	49	31473	2	2	412
February 1-15	333	1	5	17	27933	2	3	367
February 16-28	239	2	3	17	13704	1	2	247
March 1-15	291	6	4	14	5170	3	3	317
March 16-31	272	1	12	26	2054	6	1	421
April 1-15	220	3	3	30	1133	5	4	339
April 16-30	229	—	3	17	799	3	1	359
May 1-15	223	2	8	63	451	5	3	344
May 16-31	306	13	5	29	201	2	2	393
June 1-15	268	—	4	27	45	5	5	422
June 16-30	231	7	3	29	32	7	4	345
July 1-15	180	—	3	34	22	6	2	314
July 16-31	203	2	1	78	34	7	8	268
August 1-15	219	6	5	93	17	—	6	256
August 16-31	230	2	14	53	39	3	8	251
September 1-15	257	—	2	67	57	—	4	339
September 16-30	303	1	3	54	91	2	9	346
October 1-15	284	—	5	29	140	5	6	580
October 16-31	270	—	—	36	142	3	14	832
November 1-15	255	—	10	19	234	3	12	1010
November 16-30	399	—	9	33	340	5	2	918
December 1-15	302	—	18	18	412	11	3	699
December 16-31	222	—	27	19	371	4	4	573

pas de cas constaté.
x: no case reported.

Semaine finissant Week ended		Diphthérie Diphtheria	Dysenterie Dysentery	Encéphalite léthargique Encephalitis lethargica	Fièvre typhoïde et paratyph Enteric Fever	Grippe Influenza	Hoquet épidémique Epidemic Hiccoughs	Méningite cérébro-spinale Cerebro-spinal Meningitis	Paludisme Malaria	Polionmyélite Polionmyelitis	Rougeole Measles	Scarlatine Scarlet Fever
TOTAL POUR—TOTAL FOR 1922		4409	5	62	343	60235	20	30	3	65	3925	22
Janvier—January	7	204	—	3	4	2668	—	1	—	3	11	36
	14	154	—	1	2	4106	—	1	—	—	18	17
	21	138	—	2	2	6344	—	—	—	—	24	7
	28	144	—	1	—	9583	—	—	—	—	27	7
Février—February	4	115	—	—	1	9455	—	2	—	—	17	8
	11	119	—	2	3	7500	—	2	—	—	15	4
	18	105	—	1	—	6818	1	1	—	—	20	5
	25	106	—	2	1	5173	—	1	—	—	6	—
Mars—March	4	115	—	1	1	3609	—	1	—	—	21	—
	11	97	—	5	1	2143	—	—	—	—	9	—
	18	79	—	5	2	928	—	1	—	—	6	—
	25	78	2	2	4	722	—	1	—	—	15	—
Avril—April	1	88	—	1	2	278	—	—	—	—	11	—
	8	110	—	3	—	287	—	1	—	—	6	—
	15	63	—	2	11	91	—	1	—	1	5	—
	22	79	—	4	2	48	—	—	—	—	7	—
	29	81	—	4	3	17	—	2	—	1	2	—
Mai—May	6	67	—	1	3	66	—	—	—	1	6	—
	13	73	—	1	1	15	—	—	—	—	4	—
	20	59	—	—	4	15	—	—	—	—	14	—
	27	63	—	—	1	22	—	—	—	—	26	—
Juin—June	3	65	—	1	—	4	—	—	—	—	49	—
	10	77	—	—	3	8	—	—	2	—	23	—
	17	40	—	—	5	5	—	—	—	3	66	—
	24	78	—	—	59	5	—	—	—	—	59	—
Juillet—July	1	61	—	1	5	2	—	—	—	—	32	—
	8	42	—	—	8	4	—	—	—	1	50	—
	15	82	—	—	8	3	—	1	—	2	46	—
	22	44	—	1	6	—	—	—	—	1	35	—
	29	59	—	—	12	—	—	—	—	4	23	—
Août—August	5	43	—	—	5	—	—	—	—	—	29	—
	12	49	—	—	7	6	—	—	—	5	43	—
	19	38	—	—	8	3	—	2	—	—	37	—
	26	57	3	2	12	4	—	2	1	4	26	—
Septembre—September	2	69	—	—	23	5	—	—	—	—	15	—
	9	92	—	—	13	2	—	—	—	2	19	—
	16	84	—	1	7	4	—	2	—	1	54	—
	23	111	—	—	11	5	—	—	—	4	74	—
	30	74	—	—	17	5	—	—	—	1	76	—
Octobre—October	7	67	—	1	10	4	—	—	—	3	75	—
	14	59	—	2	9	11	—	—	—	1	43	—
	21	163	—	—	8	22	—	—	—	1	56	—
	28	74	—	1	3	2	—	—	—	8	64	—
Novembre—November	4	94										

22. Russie. — Russie.

(TOTAL POUR LA FÉDÉRATION — TOTAL FOR THE FEDERATION)

Source: RAPPORTS DU SERVICE STATISTIQUE DU COMMISSARIAT DU PEUPLE POUR LA SANTÉ PUBLIQUE, MOSCOU.

REPORTS FROM THE STATISTICAL DIVISION, PEOPLE'S HEALTH COMMISSARIAT, MOSCOW.

Maladies Diseases	Total* 1922	Janv. Jan.	Fév. Feb.	Mars March	Avril April	Mai May	Juin June	Juillet July	Août Aug.	Septembre Sept.	Octobre Oct.	Novembre Nov.	Déc. Dec.
Choléra.—Cholera	97442	565	475	4831	3088	9012	43189	18934	7793	629	108	15	4
Diphthérie.—Diphtheria	36774	3752	3626	4037	2824	3039	2261	2315	2584	2491	4867	2308	1294
Dysenterie.—Dysentery.	294487	44812	43176	45511	15741	25270	28926	53778	75308	34120	41701	5592	3005
Fièvre récurrente.—Relapsing fever	4479627	467406	177158	198853	450598	181844	444744	117471	87551	60076	49603	62996	48722
Fièvre typhoïde.—Enteric fever	314440	47848	45788	42985	27809	28638	18201	15189	19246	47804	17554	16139	40769
Paludisme.—Malaria.	1986417	38584	45469	63054	81838	73819	91249	66439	167351	160588	65966	52690	—
Scarlatine.—Scarlet fever. . . .	68262	8573	8248	8012	4205	4594	3369	3054	3763	4421	5798	7480	5040
Typhus exanth.—Typhus	1434395	161858	200413	269071	211383	235274	424971	62798	29825	21896	20231	33308	30616
Variole.—Smallpox	58057	3184	7279	8142	8911	7894	7760	4413	2883	1748	1161	1622	2875

Les mois de mars, mai, août et novembre contiennent les données pour cinq semaines, les autres mois pour quatre semaines.
The months of March, May, August, and November contain data for five weeks, the other months for four weeks.

* Les totaux pour l'année sont les dernières données disponibles et sont plus élevés que le total des données mensuelles. Cependant, celles-ci sont indiquées pour montrer la variation saisonnière.
* The totals for the year are the latest figures available and are greater than the sum of the monthly figures. The latter are given, however, to show the seasonal variation.

23. Ukraine.

Anthrax.—Anthrax	1153	71	405	55	53	39	112	119	276	161	68	48	46
Choléra.—Cholera	42462	317	392	786	1281	5784	8260	22627	2781	211	12	7	4
Diphthérie.—Diphtheria.	13069	4516	4475	1443	1096	1419	726	845	817	1089	1229	924	820
Dysenterie.—Dysentery	50438	4835	2493	2802	3613	4637	4743	8490	40076	6961	2750	1097	671
Fièvre récur.—Relapsing fever	467893	40172	41912	48890	51171	65673	63602	49257	30881	23835	17422	17422	15416
Fièvre typhoïde.—Enteric fever	97654	15737	15513	11487	9347	8914	6172	6132	5133	6586	5756	4836	3821
Rougeole.—Measles	35209	5767	5132	4703	5073	4415	2636	1729	1155	921	904	1047	2027
Scarlatine.—Scarlet fever. . . .	18325	3075	2408	1893	1531	4309	901	778	910	1341	1631	1487	1361
Typhus exanth.—Typhus	344843	31406	42145	53778	59588	65884	43253	49129	7165	5837	4273	5590	6795
Typhus indéfini.—Undefined	16523	5224	5566	9322	8343	9580	8075	5063	3219	2522	2321	1987	1363

ANNEXE II

OMBRE DE CAS DE CHOLÉRA, FIÈVRE RÉCURRENTÉ, TYPHUS EXANTHÉMATIQUE ET VARIOLE
NOTIFIÉS DANS LES DIFFÉRENTS GOUVERNEMENTS DE LA RUSSIE AU COURS
DES ANNÉES 1918, 1919, 1920, 1921 ET 1922.

OF CASES OF CHOLERA, RELAPSING FEVER, TYPHUS, AND SMALLPOX NOTIFIED IN THE
DIFFERENT GOVERNMENTS OF RUSSIA DURING THE YEARS 1918, 1919, 1920, 1921 AND 1922.

1. Choléra. — Cholera.

Gouvernements et Régions	1918	1919	1920	1921	1922	Region or Government
<i>de l'ouest :</i>						<i>Western Region :</i>
Total	14046	1416	153	81	191	Total
de Pétrograd . . .	8470	1187	9	34	1	City of Petrograd
de Pétrograd . . .	4665	175	3	8	1	Gov. of Petrograd
Novgorod	182	48	—	3	—	» Novgorod
Pskov	57	—	—	2	—	» Pskov
Vitebsk	454	1	141	24	127	» Vitebsk
de la Russie blanche	—	—	—	1	17	Rep. of White Russia
de Gomel	218	5	—	9	45	Gov. of Gomel
<i>du nord :</i>						<i>Northern Region :</i>
Total	650	97	—	67	227	Total
de Arkhangel . . .	—	—	—	1	58	Gov. of Arkhangel
Olonetz	83	3	—	—	—	» Olonetz
Tchérepovetz . . .	25	—	—	2	—	» Cherepovetz
Vologda	170	62	—	17	139	» Vologda
Séverodvinsk . . .	1	—	—	—	11	» Severodvinsk
Kostroma	371	32	—	47	19	» Kostroma
<i>centrale :</i>						<i>Central Region :</i>
Total	5798	179	1122	1727	604	Total
de Vladimir	192	2	62	153	—	Gov. of Vladimir
Ivanovo-Vosn. . . .	165	5	30	186	2	» Ivanovo-Vosn.
Kalouga	178	1	17	29	—	» Kaluga
de Moscou	1191	91	66	148	301	City of Moscow
de Moscou	728	47	224	313	52	Gov. of Moscow
Riazane	1049	3	254	385	193	» Riazan
Rybinsk	—	—	—	14	7	» Rybinsk
Smolensk	281	2	7	24	3	» Smolensk
Tver	473	—	14	8	—	» Tver
Toula	347	6	423	313	23	» Tula
Yaroslav	1194	22	25	154	23	» Yaroslav
<i>centrale du sud :</i>						<i>South central Region :</i>
Total	7615	213	6339	19725	1644	Total
de Briansk	—	—	701	48	—	Gov. of Briansk
Orel	922	8	422	2032	93	» Orel
Tambov	1430	61	106	4083	126	» Tambov
Voronège	2616	127	1488	10861	343	» Voronezh
Koursk	2647	17	3622	2701	1082	» Kursk
<i>Ukraine :</i>						<i>Ukraine :</i>
Total	—	—	11228	14464	42462	Total
de Volhynie	—	—	1	8	184	Distr. of Volhynia
Podolie	—	—	5	21	394	» Podolia
Kiev	—	—	196	377	1492	» Kiev
Tchernigov	—	—	121	17	743	» Chernigov

1. Choléra. — Cholera.

(Suite). — (Continued).

Gouvernements et Régions	1918	1919	1920	1921	1922	Region or Governm
<i>Ukraine: (Suite).</i>						<i>Ukraine: (Contine</i>
» Krementchoug	—	—	134	446	1500	» Krementchoug
» Poltava	—	—	431	710	3439	» Poltava
» Kharkov	—	—	2686	2394	2712	» Kharkov
» Odessa	—	—	1389	1809	14283	» Odessa
» Nikolaïev	—	—	530	776	4837	» Nikolaïev
» Ekaterinoslav	—	—	1128	1854	3215	» Ekaterinoslav
» Zaporozhe	—	—	1	557	5128	» Zaporozhe
» Donetsk	—	—	4606	5495	4535	» Donetsk
<i>Crimée:</i>						<i>Crimea:</i>
Total	—	—	—	46	2835	Total
<i>Région du Volga moyen:</i>						<i>Middle Volga Re</i>
Total	8147	2303	03	32618	1119	Total
Gouv. de Nijni-Novgorod	1139	104	19	924	96	Gov. of Nijni-Novgorod
» Kazan	659	52	—	—	—	» Kazan
Rég. de Mariskaia	—	—	—	113	1	Mariskaia Reg.
Rég. des Tchouvaches	—	—	—	437	7	Chuvash Reg.
Rép. Tatare	—	—	88	2356	2	Tartar Reg.
Gouv. de Simbirsk	486	137	14	2970	133	Gov. of Simbirsk
» Penza	400	1184	16	392	395	» Penza
» Saratov	4428	450	234	8646	339	» Saratov
» Samara	996	342	29	15259	141	» Samara
Comm. des Allemands	39	34	3	1521	5	German Comm.
<i>Région du sud:</i>						<i>Southern Region</i>
Total	3916	12	5848	23059	10580	Total
Gouv. de Tzaritzine	—	—	59	5307	671	Gov. of Tzaritzine
» Astrakhan	3916	12	140	5851	1105	» Astrakhan
Rég. des Kalmouks	—	—	—	—	157	Kalmuks Reg.
Rég. du Don	—	—	1083	1907	2584	Don Reg.
Gouv. de Kubano-Tchern.	—	—	2888	4616	4256	Gov. of Kubano-Tchern.
» Stavropol	—	—	24	2020	595	» Stavropol
» Terek	—	—	1638	1570	574	» Terek
Rép. de Daghestan	—	—	16	500	22	Daghestan Rep.
Rép. des Montagnards	—	—	—	1288	505	Mountain Rep.
Rép. de Tcherkasse	—	—	—	—	111	Rep. of Tcherkasse
<i>Région de l'est:</i>						<i>Eastern Region</i>
Total	505	47	90	45014	2523	Total
Gouv. de Viatka	136	—	—	20	57	Gov. of Viatka
Terr. des Votiaks	—	—	—	73	191	Votyak Terr.
Gouv. de Perm	28	29	1	505	178	Gov. of Perm
» Iékatérinbourg	—	17	9	1395	765	» Iékatérinbourg
» Tioumène	—	—	—	1776	434	» Tioumène
» Tchéliabinsk.	—	—	77	9929	139	» Tchéliabinsk.
Rép. des Bachkirs	—	—	—	13581	298	Bashkir Rep.
Gouv. d'Oufa	341	1	3	17735	461	Gov. of Oufa
<i>Rép. des Kirghizes</i>	612	7	293	24895	2253	<i>Kirghiz Rep.</i>
<i>Rép. de Turkestan.</i>	—	—	—	2672	2607	<i>Turkestan Rep.</i>
<i>Transcaucasie-Azerbeïdjan</i>	—	—	—	—	424	<i>Transcaucasial</i>
<i>Sibérie</i>	—	—	—	13716	23200	<i>Siberia</i>
Chemins de fer	—	—	2965	15911	4784	Railways
Voies fluviales	—	516	74	4087	595	Waterways
Prisons	—	—	—	1285	25	Prisons
Armée Rouge	338	929	3894	4371	1339	Red Army
Total, Russie	41627	5719	32410	203738	97412	Total, Russia

2. Fièvre récurrente. — Relapsing Fever.

et gouvernements	1918	1919	1920	1921	1922	Region or Government
<i>Western Region :</i>						
Total	1420	14445	76756	73272	37069	Total
Pétrograd	825	1616	6959	5565	4244	City of Petrograd
Gov. de Pétrograd	162	815	3719	1022	1341	Gov. of Petrograd
Novgorod	76	911	2552	1559	1106	» Novgorod
Pskov	10	1246	7183	1971	1418	» Pskov
Vitebsk	181	2059	13858	10137	5427	» Vitebsk
Rep. de la Russie blanche	—	—	—	33306	12760	Rep. of White Russia
Gomel	166	7798	42490	19712	10773	Gov. of Gomel
<i>Northern Region :</i>						
Total	383	2350	5160	6288	12951	Total
Mourmansk	—	—	—	—	708	Murman Terr.
Karélië	—	—	—	124	746	Karelian Comm.
Arkhangel	—	25	488	2487	1106	Gov. of Arkhangel
Olonetz	3	85	717	256	124	» Olonetz
Tchérepovetz	1	18	304	1109	821	» Cherepovetz
Vologda	254	862	646	902	4438	» Vologda
Sévérôdvinsk	39	436	599	512	1673	» Severodvinsk
Zyrianes	—	—	—	—	247	Zyrian Region
Kostroma	86	924	2406	898	3088	Gov. of Kostroma
<i>Central Region :</i>						
Total	8053	57555	102831	55718	97450	Total
Rybinsk	—	—	—	1143	5125	Gov. of Rybinsk
Yaroslav	265	3318	4867	1255	4266	» Yaroslav
Ivanovo-Vosn.	128	931	2008	1098	2852	» Ivanovo-Vosn.
Vladimir	366	4661	6446	1835	6819	» Vladimir
Tver	224	5818	6248	3773	4605	» Tver
Smolensk	418	2813	18416	11738	10615	» Smolensk
Moscou	3312	5556	4164	5266	17938	City of Moscow
Gov. de Moscou	1444	11644	12761	5487	16666	Gov. of Moscow
Kalouga	429	5003	9886	5298	8768	» Kaluga
Toula	302	4640	17541	9126	10578	» Tula
Riazan	1165	13171	20494	9699	9218	» Riazan
<i>South central Région</i>						
Total	1974	80412	344288	102480	109328	Total
Briansk	—	—	33667	9289	12765	Gov. of Briansk
Orel	606	16418	46400	12122	19397	» Orel
Tambov	955	43147	96329	40032	29435	» Tambov
Voronège	—	13900	128490	19928	20925	» Voronezh
Koursk	413	6947	39402	21109	26806	» Kursk
<i>Ukraine</i>						
Total	—	—	326075	247089	467893	Total
Volhynie	—	—	5429	5828	9611	Dist. of Volhynia
Podolie	—	—	7399	13521	23095	» Podolia
Kiev	—	—	18698	9828	31294	» Kiev
Chernigov	—	—	14660	6188	24766	» Tchernigov
Krémentchoug	—	—	7181	25560	39106	» Kremenchug
Poltava	—	—	26850	12451	67643	» Poltava
Kharkov	—	—	62333	26447	37963	» Kharkov
Odessa	—	—	32251	37715	61993	» Odessa
Nikolaïeff	—	—	24430	27205	21007	» Nikolaïev
Ekaterinoslav	—	—	65944	15916	64005	» Ekaterinoslav
Zaporozhe	—	—	2433	15874	29132	» Zaporozhe
Donetz	—	—	58467	50556	58278	» Donetz
Crimea	—	—	—	6773	8059	Crimea

2. Fièvre récurrente. — Relapsing Fever.

(Suite). — (Continued).

Régions et gouvernements	1918	1919	1920	1921	1922	Region or Governmen
<i>Région du Volga moyen</i>						<i>Middle Volga Region</i>
Total	2234	51024	131176	65804	160851	Total
Gouv. de Kazan	266	2489	16669	—	—	Gov. of Kazan
» Nijni-Novgorod	339	3964	12321	4811	9247	» Nijni-Novgorod
Rég. de Mariskaia	—	—	—	—	2596	Mariskaia Region
Rég. des Tchouvaches	—	—	1801	2270	6588	Chuvash Region
Rép. Tartare	—	—	—	12323	20580	Tartar Rep.
Gouv. de Simbirsk	244	155	5523	7335	25047	Simbirsk Gov.
» Penza	673	6928	19498	11023	25632	Gov. of Penza
» Saratov	618	21380	37150	16464	29042	» Saratov
» Samara	93	15903	37299	9665	36575	» Samara
Commune allemande	1	205	915	1913	5574	German Comm.
<i>Région du sud</i>						<i>Southern Region</i>
Total	1394	36122	23818	13839	79425	Total
Gouv. de Kabardinsk	—	—	—	—	52	Gov. of Kabardinsk
» Tzaritzine	—	—	10162	7378	11297	» Tzaritzin
» Astrakan	1394	597	113	—	4204	» Astrakha
Région des Kalmouks	—	—	—	—	1207	Kalmuk Region
» du Don	—	—	8551	2596	9138	Don Region
Gouv. de Koubano-Tcher.	—	35525	—	—	30223	Gov. of Koubanch
» Stavropol	—	—	2298	3865	9667	» Stavropol
» Terek	—	—	2694	—	3791	» Terek
Rép. de Gorskaia	—	—	—	—	6342	Gorskaia Rep.
» Daghestan	—	—	—	—	3255	Daghestan Rep.
Gouv. de Cherkasse	—	—	—	—	249	Gov. of Cherkass
<i>Transcaucasie :</i>						<i>Transcaucasia :</i>
Total	—	—	—	—	8088	Total
Rép. de Ossetine du Sud	—	—	—	—	152	Rep. of South Ossetia
» Géorgie	—	—	—	—	3608	» Georgia
» Azerbeïdjan	—	—	—	—	4328	» Azerbeïdjan
<i>Région de l'est :</i>						<i>Eastern Region :</i>
Total	903	25306	114210	56982	217028	Total
Gouv. de Viatka	363	3428	15030	5645	14013	Gov. of Viatka
Terr. des Votyaks	—	—	—	—	13960	Votyak Terr.
Gouv. de Perm	112	1511	14495	3888	20113	Gov. of Perm
» Iékatérinbourg	—	10834	40348	18758	74241	» Iékatérinbourg
» Tioumène	—	—	14394	3255	13092	» Tioumène
» Tchéliabinsk	—	—	18138	11879	24406	» Tchéliabinsk
Rép. des Bachkirs	—	—	—	1000	38914	Bashkir Rep.
Gouv. de Oufa	428	5933	11805	12557	18289	Gov. of Oufa
<i>Rép. des Kirghizes.</i>	<i>301</i>	<i>15743</i>	<i>14157</i>	<i>18136</i>	<i>55864</i>	<i>Kirghiz Rep.</i>
<i>Rép. de Turkestan.</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>16197</i>	<i>17429</i>	<i>Turkestan Rep.</i>
<i>Sibérie.</i>	<i>—</i>	<i>—</i>	<i>267270</i>	<i>41168</i>	<i>43345</i>	<i>Sibéria</i>
Chemins de fer	—	7982	66610	65109	143732	Railways
Voies fluviales	—	379	521	173	10938	Waterways
Prisons	—	—	4911	10794	10177	Prisons
Armée Rouge	463	116971	700323	240915	—	Red Army
Total, Russie	17125	408289	2178106	1020737	1479627	Total, Russia

3. Typhus exanthématique. — Typhus.

et gouvernements	1918	1919	1920	1921	1922	Region or Government
<i>l'Ouest :</i>						
Total	19802	144341	219010	82677	52203	<i>Western Region :</i> Total
de Pétrograde . .	10976	36357	18889	3606	7329	City of Petrograd
de Pétrograde . .	5031	25387	18246	1596	3483	Gov. of Petrograd
Novgorod	917	19859	9316	2181	3348	» Novgorod
Pskov	321	5905	27192	6757	3780	» Pskov
Vitebsk	1087	20053	40510	13486	6878	» Vitebsk
de la Russie Blanche	—	—	—	33441	12066	Rep. of White Russia
de Gomel	1470	36780	104857	21610	15319	Gov. of Gomel
<i>du nord :</i>						
Total	1741	29933	52847	16170	31807	<i>Northern Region :</i> Total
de Mourmansk . .	—	—	—	—	543	Murman Terr.
de la Carélie . .	—	—	—	585	1667	Karelian Comm.
de Arkhangel . .	444	608	1074	2353	1576	Gov. of Arkhangel
Olonetz	60	539	2050	663	686	» Olonetz
Tchérepovetz . .	247	4584	5741	2402	2403	» Cherepovetz
Vologda	402	10372	17195	3618	9916	» Vologda
Séverodvinsk . .	214	1995	6915	3075	5568	» Severodvinsk
Zyrianes	—	—	—	—	533	Zyrian Region
de Kostroma . .	374	11835	19872	3474	8915	Gov. of Kostroma
<i>centrale :</i>						
Total	39218	646277	442047	86218	155276	<i>Central Region :</i> Total
de Rybinsk	—	—	—	1883	9059	Gov. of Rybinsk
Yaroslav	960	34261	33123	4546	11225	» Yaroslav
Ivanovo-Vosn. . .	309	10120	7734	1596	5576	» Ivanovo-Vosn.
Vladimir	789	53205	39771	5792	16291	» Vladimir
Tver	1559	60330	49005	10357	10650	» Tver
Smolensk	4375	42733	75253	18828	16852	» Smolensk
de Moscou	6686	72248	19642	4291	18800	City of Moscow
Moscou	3584	106702	41499	6699	23411	Gov. of Moscow
Kalouga	3802	54997	40997	6733	13855	» Kaluga
Toula	6716	99233	66171	11287	14767	» Tula
Riazane	10438	112448	68852	14206	14790	» Riazan
<i>centrale du sud :</i>						
Total	29250	635686	632157	68416	74828	<i>South Central Region :</i> Total
de Briansk	—	—	59236	4551	8635	Gov. of Briansk
Orel	2296	151530	97159	9123	12176	» Orel
Tambov	22206	222458	141359	23711	18669	» Tambov
Voronège	1895	132513	172554	9917	11850	» Voronezh
Koursk	2853	129185	161849	21114	23498	» Kursk
<i>Ukraine :</i>						
Total	—	—	591842	110891	344843	Total
de Volhynie . . .	—	—	7405	3062	6666	Distr. of Volhynia
Podolie	—	—	6340	4708	12507	» Podolia
Kiev	—	—	26328	4884	20725	» Kiev
Tchernigov . . .	—	—	67472	10830	24110	» Chernigov
Krementchoug . .	—	—	8213	13193	25571	» Kremenchoug
Poltava	—	—	117290	13300	59480	» Poltava
Kharkov	—	—	181171	19699	25542	» Kharkov
Odessa	—	—	26328	4884	72200	» Odessa
Nikolaïev	—	—	30280	17763	21021	» Nikolaïev
Iékaterinoslav . .	—	—	54900	3430	29682	» Ekaterinoslav
Zaporozhe	—	—	516	5130	19922	» Zaporozhe
Donetz	—	—	65599	10008	27417	» Donetsk
Crimea	—	—	—	5333	14314	Crimea

3. Typhus exanthématique. — Typhus.

(Suite). — (Continued).

Régions et gouvernements	1918	1919	1920	1921	1922	Region or Governm.
<i>Région du Volga moyen :</i>						<i>Middle Volga Region :</i>
Total	19328	466250	649787	100024	219327	Total
Gouv. de Kazan	1800	30169	107824	—	—	Gov. of Kazan
» Nijni-Novgorod . . .	1098	39059	70826	11673	18440	» Nijni-Novgorod
Rég. de Mariskaïa . . .	—	—	—	—	6875	Mariskaïa Region
Rég. des Tchouvaches . .	—	—	5186	2321	8360	Chuvash Region
Rép. Tartare	—	—	—	27485	39061	Tartare Rep.
Gouv. de Simbirsk	2950	65682	82911	10955	39394	Gov. of Simbirsk
» Penza	6826	84891	106796	12817	27216	» Penza
» Saratov	6081	152981	129054	20562	40799	» Saratov
» Samara	553	90396	139743	7718	25647	» Samara
Commune allemande . . .	20	3072	7447	6493	13535	German Comm.
<i>Région du sud :</i>						<i>Southern Region :</i>
Total	11967	5052	34684	4480	42430	Total
Gouv. de Kabardinsk . . .	—	—	—	—	9	Gov. of Kabardinsk
» Tzaritzine	—	—	16259	2151	5687	» Tzaritzine
» Astrakhan	11967	5052	8586	—	3927	» Astrakhan
Rég. des Kalmouks	—	—	—	—	1031	Kalmuk Reg.
Région du Don	—	—	7039	809	3385	Don Region
Gouv. de Koubano-Tchern.	—	—	—	—	16547	Gov. of Kuban-Tchern.
» Stavropol	—	—	482	1520	3547	» Stavropol
» Terek	—	—	2318	—	2055	» Terek
Rép. de Gorskaïa	—	—	—	—	4607	Gorskaïa Rep.
Gouv. de Daghestan . . .	—	—	—	—	1542	Gov. of Daghestan
» Tcherkassie	—	—	—	—	93	» Tcherkassie
<i>Transcaucasie :</i>						<i>Transcaucasia :</i>
Total	—	—	—	—	12946	Total
Rép. de Géorgie	—	—	—	—	7455	Georgian Rep.
Rép. d'Azerbeïdjan	—	—	—	—	5429	Azerbeïdjan Rep.
Rép. d'Ossetina	—	—	—	—	62	Ossetina Rep.
<i>Région de l'est :</i>						<i>Eastern Region :</i>
Total	7362	91759	289750	65592	230353	Total
Gouv. de Viatka	2571	29053	92694	20410	39503	Gov. of Viatka
Terr. des Votyaks	—	—	—	—	29175	Votyaks Terr.
Gouv. de Perm	460	2457	25701	14944	52348	Gov. of Perm
» Iékaterinbourg	—	17049	87601	14003	60132	» Iékaterinbourg
» Tioumène	—	—	17227	2542	12500	» Tioumène
» Tchéliabinsk	—	—	15826	4683	6635	» Tchéliabinsk
Rép. des Bachkirs	—	—	—	1574	19608	Bashkir Rep.
Gouv. de Oufa	4331	43200	50701	7436	10452	Gov. of Oufa
Rép. Kirghize	1396	18139	26598	4326	23087	Kirghiz Rep.
Rép. de Turkestan	—	—	—	9775	16721	Turkestan Rep.
Sibérie	—	—	347574	34241	43722	Siberia
Chemins de fer	—	97004	195789	40919	142596	Railways
Voies fluviales	—	1216	1822	207	21930	Waterways
Prisons	—	—	5282	2956	5012	Prisons
Armée Rouge	3893	205034	456385	71557	—	Red Army
Russie, Total	133957	2340691	3945574	703782	1431395	Russia: Total

4. Variole. — Smallpox.

gouvernements	1918	1919	1920	1921	1922	Region or Government
<i>Northern Region</i>						
<i>Nord :</i>						<i>Northern Region</i>
Total	10651	14061	9135	6452	3451	Total
Arkhangel.	123	491	277	1037	327	Gov. of Arkhangel
Vologda.	2015	2420	1393	578	454	» Vologda
Kostroma.	2422	4188	1992	734	549	» Kostroma
Mourmansk.	—	—	—	7	—	Murman Terr.
Olonetz.	1174	2232	729	23	21	Gov. of Olonetz
Séverodvinsk.	3693	766	1121	963	1396	» Severodvinsk
Tchérepovetz	1224	3964	3623	3003	223	» Cherepovetz
Zyriane.	—	—	—	—	380	Zirian Region
e Karélie.	—	—	—	107	101	Karelian Community
<i>Central Region :</i>						
Total	20628	71780	28312	13381	5048	Total
Vladimir.	4159	6087	1196	311	324	Gov. of Vladimir
Ivanovo-Vosn.	2433	3854	1607	486	496	» Ivanovo-Vosn.
Kalouga.	1063	2976	1755	1263	268	» Kaluga
Moscou.	2270	11725	1025	503	327	» Moscow
Moscou.	1256	4961	598	585	451	City of Moscow
Riazane.	2179	3756	4455	3931	1575	Gov. of Riazan
Rybinsk.	—	—	—	204	117	» Rybinsk
Smolensk.	3472	4085	3503	501	212	» Smolensk
Tver.	1729	14987	7312	2856	337	» Tver
Toula.	1039	6037	1103	1275	376	» Toula
Yaroslav.	1028	13312	5758	1466	565	» Yaroslavl
<i>South central Region :</i>						
Total	6448	20618	28089	16047	4201	Total
Briansk.	—	—	3543	1468	190	Gov. of Briansk
Voronege.	153	1143	6218	2920	565	» Voronezh
Koursk.	1153	5621	7342	2715	1165	» Kursk
Orel.	643	7433	4178	4854	890	» Orel
Tambov.	4499	6421	6808	4090	1391	» Tambov
<i>Middle Volga Region</i>						
Total	4661	18905	19259	9233	6595	Total
Nijni-Novgorod	2268	2869	1366	1197	393	Gov. of Nijni-Novgorod
Penza.	454	4493	10780	2824	1359	» Penza
Samara.	186	4326	2351	1121	1040	» Samara
Saratov.	285	3505	2449	1410	380	» Saratov
Simbirsk.	1444	3438	967	787	1570	» Simbirsk
Mariskaïa.	—	—	—	—	889	Mariskaïa Reg.
e allemande.	24	274	935	—	207	German Comm.
Tchouvaches.	—	—	411	499	447	Chuvash Reg.
Tartare.	—	—	—	1395	310	Tartar Rep.
<i>Ukraine :</i>						
Total	—	—	34730	28123	10748	Total
Volhynie.	—	—	297	379	131	Distr. of Volhynia
Donetz.	—	—	3158	2216	1730	» Donetsk
Ekaterinoslav.	—	—	3559	876	1256	» Ekaterinoslav
Zaporozhe.	—	—	386	1273	280	» Zaporozhe
Kiev.	—	—	2817	1096	360	» Kiev
Krementchoug.	—	—	1008	2577	986	» Kremenchug
Nikolaïev.	—	—	1369	4763	646	» Nicolaïev
Odessa.	—	—	1874	6008	1188	» Odessa
Podolie.	—	—	595	2415	817	» Podolia
Poltava.	—	—	6984	1475	1381	» Poltava
Kharkov.	—	—	9956	3917	1580	» Kharkov
Tchernigov.	—	—	2727	1128	393	» Tchernigov

4. Variole. — Smallpox.
(Suite). — (Continued)

Régions et gouvernements	1918	1919	1920	1921	1922	Region or Governm
<i>Région du sud :</i>						<i>Southern region :</i>
Total	130	46	3459	2237	6199	Total
Gouv. d'Astrakhan . .	130	46	16	—	367	Gov. of Astrak
Rég. du Don	—	—	1295	365	690	Don Region
Gouv. de Tzaritzine . .	—	—	1223	1260	944	Gov. of Tzarit
Rég. des Kalmouks . .	—	—	—	—	678	Kalmuk Regio
Gouv. de Koubano-Tcher.	—	—	—	—	1867	Gov. of Kubar
» Stavropol	—	—	135	612	494	» Stavro
» Terek	—	—	790	—	383	» Terek
Rép. de Daghestan . .	—	—	—	—	59	Rep. of Daghea
Rép. des Montagnards .	—	—	—	—	590	Mountain Rep
Gouv. de Kabardinsk .	—	—	—	—	135	Gov. of Kaba
» Tcherkasse	—	—	—	—	12	» Cherk
<i>Transcaucasie :</i>						<i>Transcaucasia :</i>
Total	—	—	—	—	1832	Total
Rép. de Azerbeïdjan . .	—	—	—	—	263	Rep. of Azerba
» Ossetine du sud . .	—	—	—	—	13	» S. Ossin
» Géorgie	—	—	—	—	1556	» Georg
<i>Region de l'est :</i>						<i>Eastern Region</i>
Total	2105	2766	11046	8934	7621	Total
Gouv. de Viatka	1685	1865	4929	2366	2641	Gov. of Viatk
» Iékaterinbourg . .	—	199	2767	4464	1318	» Ekaten
» Perm	—	22	839	786	1378	» Perm
» Oufa	420	680	1934	261	114	» Ufa
Rég. des Votyaks . . .	—	—	—	—	711	Votyak Regio
Rép. Bachkirs	—	—	—	603	355	Bashkir Rep.
Gouv. de Tiumène . . .	—	—	577	226	855	Gov. of Tium
» Tchéliabinsk . . .	—	—	—	228	249	» Cheliab
<i>Rég. de l'ouest :</i>						<i>Western Region</i>
Total	8126	33929	14697	3099	1415	Total
Gouv. de Vitebsk . . .	950	3560	617	289	160	Gov. of Viteb
» Gomel	653	9332	7628	1276	594	» Gome
» Novgorod	445	8703	1229	61	43	» Novg
» Pétrograd	3458	6256	1775	288	163	» Petro
Ville de Pétrograd . . .	1263	4255	1150	138	143	City of Petro
Gouv. de Pskov	1357	1823	2298	566	103	Gov. of Psko
Rép. de la Russie blanche	—	—	—	481	209	Rep. of Whit
<i>Crimée.</i>	—	—	—	1586	744	<i>Crimea</i>
<i>Sibérie.</i>	—	—	577	454	2401	<i>Siberia</i>
<i>Rép. Kirghize.</i>	185	805	—	886	3838	<i>Kirghiz Rep.</i>
<i>Rép. de Turkestan.</i> . . .	—	—	—	1063	987	<i>Turkestan Rep</i>
Chemins de fer	—	5201	4161	5511	2487	Railways
Voies fluviales	—	31	87	76	481	Waterways
Prisons	—	—	20	51	9	Prisons
Armée rouge	152	2208	3322	1896	—	Red Army
Total	53086	170350	156894	99029	58057	Total

ANNEXE III.

TOTAL DES CAS DE MALADIES NOTIFIÉS EN ECOSSE EN 1922.

ANNUAL TOTALS OF CASES OF DISEASES NOTIFIED IN SCOTLAND, 1922.

Rapports de l'Administration sanitaire de l'Ecosse. — Report from the Scottish Board of Health.

Maladie — Disease	Nombre de cas Number of cases
Diphtérie — Diphtheria	7.371
Dysenterie — Dysentery	42
Fièvre typhoïde — Enteric Fever	440
Paludisme — Malaria	117
Pneumonie (primaire et grippale) — Pneumonia (primary and influenzal)	13.950
Fièvre récurrente — Relapsing Fever	0
Fièvre scarlatine — Scarlet Fever and Scarlatine	14.583
Variole — Smallpox	7
Tuberculoses (pulmonaires) — Tuberculosis (pulmonary)	7.744
Tuberculoses (autres formes) — Tuberculosis (other forms)	4.596
Typhus exanthématique — Typhus	42

ANNEXE IV.

TOTAL DES DÉCÈS DUS A CERTAINES MALADIES INFECTIEUSES EN ESPAGNE EN 1922.

ANNUAL TOTALS OF DEATHS FROM CERTAIN INFECTIOUS DISEASES IN SPAIN, 1922.

Rapports du Bureau de Statistique. — Report from the Statistical Office.

Maladie — Disease	Nombre de cas Number of cases
Diphtérie — Diphtheria	2.822
Fièvre typhoïde — Enteric Fever	5.203
Grippe — Influenza	7.955
Rougeole — Measles	6.370
Pneumonie — Pneumonia	9.879
Fièvre scarlatine — Scarlet Fever	614
Variole — Smallpox	1.185
Tuberculoses (pulmonaires) — Tuberculosis (pulmonary)	26.432
Typhus exanthématique — Typhus	73
Coqueluche — Whooping cough	1.171

C. H. 159.

LEAGUE OF NATIONS
HEALTH ORGANISATION.

STATISTICAL HANDBOOKS SERIES: No. 1

THE OFFICIAL VITAL STATISTICS
OF THE
KINGDOM
OF THE NETHERLANDS

GENEVA 1924

THE KINGDOM OF THE NETHERLANDS
(Administrative Divisions).



PREFATORY NOTE.

The Health Section of the Secretariat of the League of Nations presents herewith the first volume of a proposed series of handbooks on the vital statistics of various countries, which deals with the Kingdom of the Netherlands. In so doing wishes to express its gratitude and thanks for the generous help given by the technical officials and others with whom much consultation and correspondence was necessary by the authors of the text.

This handbook was prepared on the invitation of the Health Section by Dr. Major Greenwood and Major P. Granville Edge, of London, England, who are at present preparing also similar texts on several other countries. The Section appreciates interest and care with which the authors performed their work and wishes to thank them most cordially.

Geneva, January 1925.

HEALTH SECTION OF THE SECRETARIAT
OF THE LEAGUE OF NATIONS.

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OFFICIAL VITAL STATISTICS OF THE KINGDOM OF THE NETHERLANDS.

1. INTRODUCTION.

The need for a ready and reliable source of detailed and descriptive information on the official vital statistics of the various countries has long been keenly felt by statisticians and public health officers. The difficulties which are at once encountered in data from two or more countries are assembled for comparative purposes are familiar to all. When the Health Committee of the League of Nations decided to collect and publish current data on the prevalence of the chief communicable diseases, important questions arose concerning the comparability of the data. Subsequently, in organising its programme of statistical work, it was planned as a special activity to prepare a series of handbooks describing the official vital statistics of the various countries.

Therefore it is the purpose of these volumes to present a review of the existing practice and procedures in the collection and publication of statistics on population, births, deaths and notifiable diseases, including not only methods of registration but also the current published reports. Effort has been made to include especially the facts and knowledge of which is important when comparisons are made of statistics from two or more countries. The statistics themselves are discussed chiefly with regard to the form and contents of the official reports in which they are presented. It is realised that even when meticulous care is exercised in preparing such handbooks as these, errors may not be entirely avoided and the ultimate utility of the work can be judged best only by actual experience. Nevertheless it is confidently expected that they will prove useful and valuable as reference books on the details of method and procedure in the various national offices which collect and publish vital statistics.

2. THE NETHERLANDS.

AREA.

Owing to constant erosion of the coasts on the one hand and reclamation, marshland on the other, the area is constantly undergoing change. The area is approximately 34,201.46 square kilometres.

POPULATION.

On December 31st, 1920, the population was estimated to be as follows :

(a)	According to Population Registers	6,926,3
(b)	According to Census Results.....	6,865,3

GOVERNMENT.

The Sovereign is a constitutional and hereditary monarch, to whom belong exclusively the executive power of the realm ; the legislative authority is laid with equal responsibility upon the Sovereign and the Parliament, the latter, known as the *Staten Generaal*, comprising an Upper and a Lower Chamber.

ADMINISTRATIVE DIVISIONS.

The Kingdom consists of eleven provinces and 1,100 communes (December 31st, 1920). Each of the *provincial* divisions has at its head a Commissioner, who is the chief magistrate of the province and the nominee of the Sovereign. Each province has its own representative body, the Provincial States (*Provinciale Staten*), whose members are elected for four years, who in turn elect a permanent commission, the Deputed States (*Gedeputeerde Staten*), of six members, charged with executive power within the province and with the daily administration of the common laws. The provincial Commissioner presides over both the Provincial and the Deputed States.

The commune is the local administrative unit, having a communal council, and executive powers regarding local affairs being vested in the Communal College formed by the Burgomaster, who is appointed by the Sovereign, and two to six Aldermen (*Welhouders*) chosen by and from the members of the Council. The College has authority to enforce the observance of public laws, and also has powers to frame and enforce by-laws for the communal welfare.

PUBLIC HEALTH ADMINISTRATION.

The Law of November 27th, 1919, which came into force on September 1st, 1920, prescribes that the officials of the Health Department shall form a part of, and be

subordinate to, the Ministry of Labour, the Director-General of Public Health being directly responsible to that Minister for the activities and efficiency of the Department of Public Health.

The Public Health Council (*Gezondheidsraad*), formed under authority of the Royal Decree of 1903, modified by the Law of 1919, exists for the purpose of advising the responsible Ministry on all matters appertaining to public health. The Council comprises some fifteen sub-committees, each of which is charged with the consideration of a particular question or questions, namely :

- I. General and social health work.
- II. Infectious diseases.
- III. General pharmaceutical work.
- IV. Pharmaceutical and chemical work, particularly with regard to preparation of commercial chemical products and articles of use.
- V. Feeding, etc.
- VI. Hygiene of childhood.
- VII. Tuberculosis.
- VIII. The Alcohol problem.
- IX. Cattle and meat examination.
- X. Water, Field and Air.
- XI. Medical assistance and nursing.
- XII. Venereal diseases.
- XIII. The Housing problem.
- XIV. Statistical researches.
- XV. Studying the results of Ankylostomiasis researches.

The country is divided into Health Inspectorial Districts, each with its quota of specially appointed personnel, responsible for the due observance of all regulations pertaining to public health, and required to assist communal health organisations where necessary.

There are also 134 Health Committees throughout the Kingdom, covering the general sanitary districts, the members being chosen from among the inhabitants of the district, and appointed by the Governor of the Province in which the committee has seat, with the two exceptions of Amsterdam and Haarlem, whose members are elected by the Communal Council.

3. ESTABLISHMENT AND RESPONSIBILITY FOR STATISTICS.

HISTORICAL.

It might be said that there existed no systematic statistical observation in the Netherlands until towards the close of the eighteenth century, the first governmental statistical effort being the taking of the census in 1795.

In 1812, registers of births, marriages and deaths were introduced in communal areas, and data under these three headings are available from the years following 1815. Later, the Royal Decree of 1828 and the Law of April 22nd, 1879, definitely established and provided for the regular decennial census.

Other landmarks in the history of Dutch statistics are :

The establishment in 1826, in the Department of Home Affairs, of a Statistical Bureau.

The establishment of a Government Commission on Statistics, 1861 (repealed in 1861).

The creation of a Central Commission of Statistics in 1892.

The reorganisation of this Commission in 1899, and the establishment of a Central Bureau of Statistics — the Central Commission becoming an exclusively advisory body.

GENERAL.

This Central Bureau of Statistics was charged with the responsibility for all official statistical data. The Bureau publishes at regular intervals information regarding :

The population, according to age, sex, civil status, birthplace, nationality, religion and occupation.

Births, by sex and legitimacy.

Still-births, by sex and legitimacy.

Deaths, indicating age, sex and cause of death.

Notifiable diseases : number of cases reported, etc.

Further particulars in greater detail, together with descriptions of the various tabulations employed in published and other official reports, will be found in the pages following, indicating how this information is arranged according to :

Age and sex distribution.

Administrative divisions of the country.

Population groups employed are described and the titles of official publications and brief summaries of their contents are added.

Municipal Statistical Bureaux have been established at :

Amsterdam.

Utrecht.

The Hague and Rotterdam.

4. THE POPULATION IN THE NETHERLANDS.

SOURCES OF INFORMATION.

Three sources of information are available, namely :

The Census results,
Registers of births, deaths and marriages,
The records in the Population Registers.

A Royal Decree of September 29th, 1828, the Law of April 22nd, 1879, and the Law of April 26th, 1918, established and provided for the regular decennial census, while the keeping of population registers has continued regularly and effectively since the year 1849, when they were introduced into all communities by authority of a Royal Decree of that year.

THE CENSUS.

At every decennial census, the population registers are compared with the population enumeration cards, for the purpose of detection and correction of possible errors that may exist.

The Laws establishing and providing for the regular decennial census have been mentioned above ; it remains to add that, prior to the year 1920, the census was taken in the Netherlands in years whose final figure was a 9¹, whereas the Law of April 26th, 1918, provided that, for the future, the census should be taken on the last year of those years whose final digit was zero, in order that the Dutch census date might conform with the custom holding in the majority of other countries.

Following the publication of the necessary Royal Decree which always precedes each census and announces the intention of the State to undertake an enumeration of the population and the manner in which the operation will be regulated, the plans and instructions previously prepared by the Central Statistical Bureau are issued in detail by the responsible Ministry, namely, the Ministry of the Interior.

Under the Law, all local authorities are charged with the responsibility of efficiently and effectually carrying out these instructions and with the taking of the census within their municipal or communal boundaries. The methods adopted and the literature and schedules used are the same throughout the country, so that the results may be exactly conformable. To meet the cost of the operation, the State grants to each local authority an indemnity at a fixed rate — that at the last census being assessed at 12 cents per head of the enumerated population.

The purpose of the census being to establish and indicate the condition of the population of the Kingdom at midnight on a fixed day of the year, then eight days

¹ The census of the year 1849 was held on November 19th ; the census of the year 1869 on December 1st ; all other censuses were held on December 31st.

prior to that day the census agents commence their duties by distributing the literature and instructions required for this purpose, and, where necessary, explaining the procedure to be followed. These agents, generally selected from school-teachers, junior officials in the public service, etc., are remunerated at the rate of about 6 cents per head of the population enumerated by them, but no such agent may be responsible for more than 1,000 persons in his area.

The official literature employed during the taking of a census in the Netherlands is as follows :

- (a) *For heads of households*: an envelope containing sufficient schedules for each individual member of the family.
- (b) *For persons living alone*: as in (a) above, but containing only one schedule.
- (c) *For institutions, etc.*: a special envelope containing sufficient schedules for all persons living in such institution.

These envelopes also indicate :

in which part of the commune the dwelling or institution is situated ;
whether the dwelling is a house, boat or vessel, or caravan ;

in the case of heads of households also :

the number of rooms occupied ; the number of individual members of the family by sex and age (under 14 years and 14 years and over) ; number of servants by sex ; whether the head of household is married, and if so, whether husband and wife live in the same house ; the occupation of the head of household ;

in the case of persons living alone also :

number of rooms occupied ;

and in the case of institutions :

the object of such institution.

The individual schedules contained in the envelopes are of different colours for the two sexes, namely :

	<i>For males.</i>	<i>For females.</i>
(a) For members of households and persons living alone :	Yellow	White.
(b) For institutions :	Blue.	Grey.
(c) For temporary residents	Orange.	Pink.

The head of the household or other responsible person is required to ensure completion and return to the census agent of these schedules, which provide the following information :

1. Surname and christian names.
2. Whether a member of a household or living alone.

3. Relation to head of household (*e.g.* whether head, wife, child, domestic servant, etc.).
4. Place of birth.
5. Nationality.
6. Religion.
7. Infirmary, if any (*e.g.* deaf, blind, etc.).
8. Date and year of birth.
9. Civil status, also indicating in the case of married women :
 - (a) Name and age of husband.
 - (b) Date and year of marriage.
 - (c) Number of children of each sex born living and still-born, issue of the marriage, and number of children born alive but since deceased.
10. Principal profession and secondary occupation, if any, indicating whether head of the business or employee.

Following the actual date of census (December 31st), the agent proceeds, between January 1st and 10th, to collect the completed schedules, in each case assuring himself they are correctly compiled and that the correct number of schedules is returned from several dwellings. The collection of schedules completed, they are scrutinised at the "mairie" or "hôtel de ville", the information contained in them being verified with the records existing in the Registers of Population. The names of persons for whom a yellow, white, blue or grey schedule is received, but whose names do not appear in the register, are inscribed, while those for whom no schedule is received, but whose names appear in the register, are erased.

The orange and pink schedules received (for temporary residents) of persons living in one of the Netherlands communes are sent to the council of the particular commune, to be compared with the yellow, white, blue or grey schedules received there.

After verification, schedules are sent in their envelopes direct to the Central Statistical Bureau, where they are again scrutinised and corrected as may be necessary, and where the results are finally tabulated and estimated and prepared for publication.

THE POPULATION REGISTERS.

By virtue of a Royal Decree of December 22nd, 1849, the Councils were bound from January 1st, 1850, on, to keep and maintain a population register for all those who lived within the limits of the communal area. This register had to contain their names. The provisions of this Royal Decree were sanctioned by the Law of April 17th, 1887, in order to make it possible to impose penalties in case of transgressions.

After having undergone various technical alterations, the Law and two Royal

Decrees still exist. The first of the latter two dates from July 27th, 1887, and it regulates the duty of the citizens in declaring the entries and deletions that are to be made in the population registers. The Decree of December 22nd, 1922, gives the necessary indications as regards the way the registers should be kept and maintained.

All persons who either settle within the limits of the communal area or depart from it are required to give notice at the population office, in order to have the necessary inscriptions or deletions made.

The Councils are responsible for the maintenance and safe custody of the registers which contain the following information regarding the population :

- (a) Surname and christian names ;
- (b) Sex ;
- (c) Relation to head of household ;
- (d) Date and place of birth ;
- (e) Civil status ;
- (f) Religion ;
- (g) Nationality ;
- (h) Profession or trade ;
- (i) Domicile within the limits of the communal area ;
- (k) Date of inscription, with indication of previous domicile (if any) ;
- (l) Date of deletions with indications of future domicile ;
- (m) Date of death.

In a column for *observations*, other particulars may be stated, such as : legal domicile, etc.

INTERCENSAL ESTIMATES OF THE POPULATION.

The information supplied by communal registrars extracted from the registers of births and deaths and the population registers, and forwarded to the Central Statistical Bureau, is used in making such estimations. The results of the most recent census are taken as a basis, and new inscriptions (*e.g.* births and other arrivals) and deletions (*e.g.* deaths and other departures) are employed in the process, births and deaths being extracted from the registers of births and deaths, arrivals and departures from the population registers.

For example, the population on December 31st, 1921, would be obtained by adding to the official census results of 1920 the difference between arrivals (births and other arrivals) and removals (deaths and other departures) during 1921, or by subtracting from the census results the difference between arrivals and removals when the latter exceed the former.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION REGARDING THE POPULATION.

The numerous official publications issued by the Central Statistical Bureau of the Netherlands present data in a manner which is at once clear, concise, and ample.

ail. Since the information is presented in a variety of forms, a brief description of these tabulations and the volumes in which they appear are given below.

Volkstelling (The Census Results).

(a) Information regarding the population of every commune in its different divisions : number of institutions, dwellings, other buildings, house-boats and pavans, for communes, grouped communes, provinces and for the whole Kingdom.

(b) Information regarding the population in the different communes, groups of communes, provinces, and the Kingdom as a whole, according to sex, age and civil status. The age groups followed are :

Less than 1 year	25-29 years.
1- 4 years	30-34 »
5- 6 »	35-39 »
7- 9 »	40-44 »
10-11 »	45-49 »
12 »	50-54 »
13 »	55-59 »
14 »	60-64 »
15 »	65-69 »
16-18 »	70-74 »
19 »	75-79 »
20 »	80 years and over
21-24 »	Age unknown.

Information regarding civil status indicates numbers of persons :

Single,
Married,
Separated (*gescheiden van tafel en bed*),
Widows and widowers,
Divorced,
Unknown.

These particulars are again given in a summary by population groups, namely :

Communes with less than 500.	Communes with 10,001 to 20,000.
» 501 to 1,000.	» 20,001 to 50,000.
» 1,001 to 2,000.	» 50,001 to 100,000.
» 2,001 to 5,000.	» 100,001 and over.
» 5,001 to 10,000.	

(c) A summary of population for communes of more than 20,000 inhabitants, grouped communes, provinces and for the whole Kingdom, by sex and age groups, and year of birth and civil status. These are given for each year of life up to 99 and 100 years and over, grouped.

(d) This table provides a summary of population according to place of abode being given by communes of more than 20,000 inhabitants, groups of communes, provinces, and for the Kingdom as a whole, and showing :

Numbers of inhabited houses.

- » families.
- » heads of families, wives, children, servants, and other members of the same family group.
- » persons living apart.
- » population in other establishments and institutions.

All the above given by sex.

(e) Here is provided a summary of population by sex and place of birth, indicating, of the living population :

Numbers born in the commune in which now living.

- » in another commune of the same province.
- » in another province.
- » in one of the Dutch Colonies.
- » in other foreign countries.
- » but place of birth unknown.

All the above information supplied by communes of more than 20,000 inhabitants, groups of communes, provinces, and for the whole Kingdom.

(f) In this table appears a summary of population by sex according to nationality, by communes of more than 20,000 inhabitants, groups of communes, provinces, and for the whole Kingdom, etc., indicating numbers of subjects of :

The Netherlands.	Sweden.
Germany.	Norway.
Belgium.	Denmark.
Great Britain.	Luxemburg
France.	Turkey.
Italy.	Poland
Switzerland.	Czechoslovakia.
Austria and Hungary.	Other countries.
Russia.	Without nationality.
United States of America.	Unknown.

(g) Information regarding population by religion and sex in the different communes, groups of communes, provinces and in the whole Kingdom.

(h) A summary of population by religion, sex, age groups and civil status of communes of more than 20,000 inhabitants, groups of communes, provinces and for the whole Kingdom.

(i) Life tables by sex for the whole Kingdom and for the population of the communes of more than 20,000 inhabitants in total.

Jaarcijfers voor het Koninkrijk der Nederlanden.

(a) Population of each province of the Kingdom and for the principal and other communes, results of each census since 1830, but no indication of sex. Absolute figures.

(b) Population of each province of the Kingdom and for the principal and other communes, according to the registers of population, yearly since 1905. Absolute figures, totals only, no indication of sex.

(c) Increase of the population decennially since 1830. Ratio per 100 each sex, tabulated according to :

Communes of over 20,000 population,
Other communes,
The Kingdom.

(d) Increase of population in each province decennially since 1830, no indication of sex ; increases per cent in each province, results of census.

(e) Density and increase per cent of population per square kilometre for each province of the Kingdom in 1920, and increase of density for the whole Kingdom since 1830.

(f) Population by sex decennially for the Kingdom since 1830. Census results. Population by sex yearly since 1910 according to registers of population. Absolute figures and by sex calculated per 100 inhabitants.

(g) Population according to civil status and sex, decennially since 1830, indicating :

Single,	Divorced,
Married,	Separated,
Widows and widowers,	Civil state unknown.

Also, percentage population of each sex and according to civil status.

(h) Population according to age distribution in the census results since 1840, groups being :

0- 1 year	50-59 years.
Yearly to 4 years	60-64 »
5- 9 years	65-69 »
10-19 »	70-74 »
20-29 »	75-79 »
30-39 »	80 and over.
40-49 »	Age unknown.

Also, proportions per cent, by sex and age.

(i) Population, absolute figures for the whole Kingdom, for each year of the century, and according to civil status.

(k) Population according to place of birth at the period of each census since 1890, indicating persons :

- Born in the commune,
- Born in another commune of the same province,
- Born in another province of the Kingdom,
- Born in a Dutch Colony,
- Foreign-born,
- Unknown.
- Percentage of population for each group of birthplaces.

(l) Population according to nationality at the time of census since 1890, indicating :

- Dutch, German, Belgian,
- English, French,
- Others.

(m) Population according to religion since 1869.

For 1920 calculated per 10,000 inhabitants. Other years absolute figures, and percentages of increase or decrease since 1869.

(n) Population by sex of the four principal communes, *e.g.* Amsterdam, Rotterdam, The Hague and Utrecht, according to census results and registers of population. Absolute figures. Increase of population in these communes and percentage of increase.

Statistiek van de Sterfte, naar den leeftijd, etc.

This publication, which is mainly devoted to mortality in the Netherlands, gives the mean population by sex for each commune, and each province for the following groups of communes :

- More than 100,000 inhabitants,
- 50,001 — 100,000 »
- 20,001 — 50,000 »
- 5,001 — 20,000 »
- 5,000 and less,

together with totals for the provinces, the above groups of communes and for the whole Kingdom by sex since 1900.

Statistiek van den loop der Bevolking.

(a) Population by sex, decennially since 1830. Absolute figures, together with rate of increase per year. Proportion of men and women per hundred inhabitants. Proportion of women per 1,000 men.

(b) Total population in communes of fixed population groups, together with percentage of increases in these grouped communes.

(c) Total population in communes having more than 20,000 inhabitants, together with rate of increase.

Since 1920, comparison of annual increase.

(d) Population by communes, provinces, the four principal communes and grouped communes according to the registers of population by sex for the year under review, and yearly for the Kingdom since 1912.

Algemeen Overzicht van de Huwelijken, der Geboorten en der Sterfte, etc.

This monthly leaflet, issued by the Central Statistical Bureau, contains the estimated number of inhabitants in provinces, in communes of more than 20,000 inhabitants, in grouped communes and for the Kingdom for the month of issue.

5. REGISTRATION IN THE NETHERLANDS.

General.

Registration of births, marriages, and deaths is compulsory in the Netherlands, failure to comply with the regulations in force being a punishable offence against the State.

The system of registration is based upon the laws outlined in the Code Napoleon which imposes the duty of custody of the registers and inscription, and the necessary formalities to be observed in the proper compilation of such records, upon the communal authority, that is, the mayor or his deputy, the registers required to be maintained being :

- (a) The Register of Population ;
- (b) The Register of Births ;
- (c) The Register of Declarations, Banns, etc., of Marriages ;
- (d) The Register of Marriages and Divorces ;
- (e) The Register of Deaths.

The system of registration is so complete and well organised that practically no births or deaths escape registration.

In so far as the accuracy of the population registers is concerned, it is interesting to note the census results compared with the records contained in the population registers at the time of census, for example :

Results of Census, December 31st, 1920.

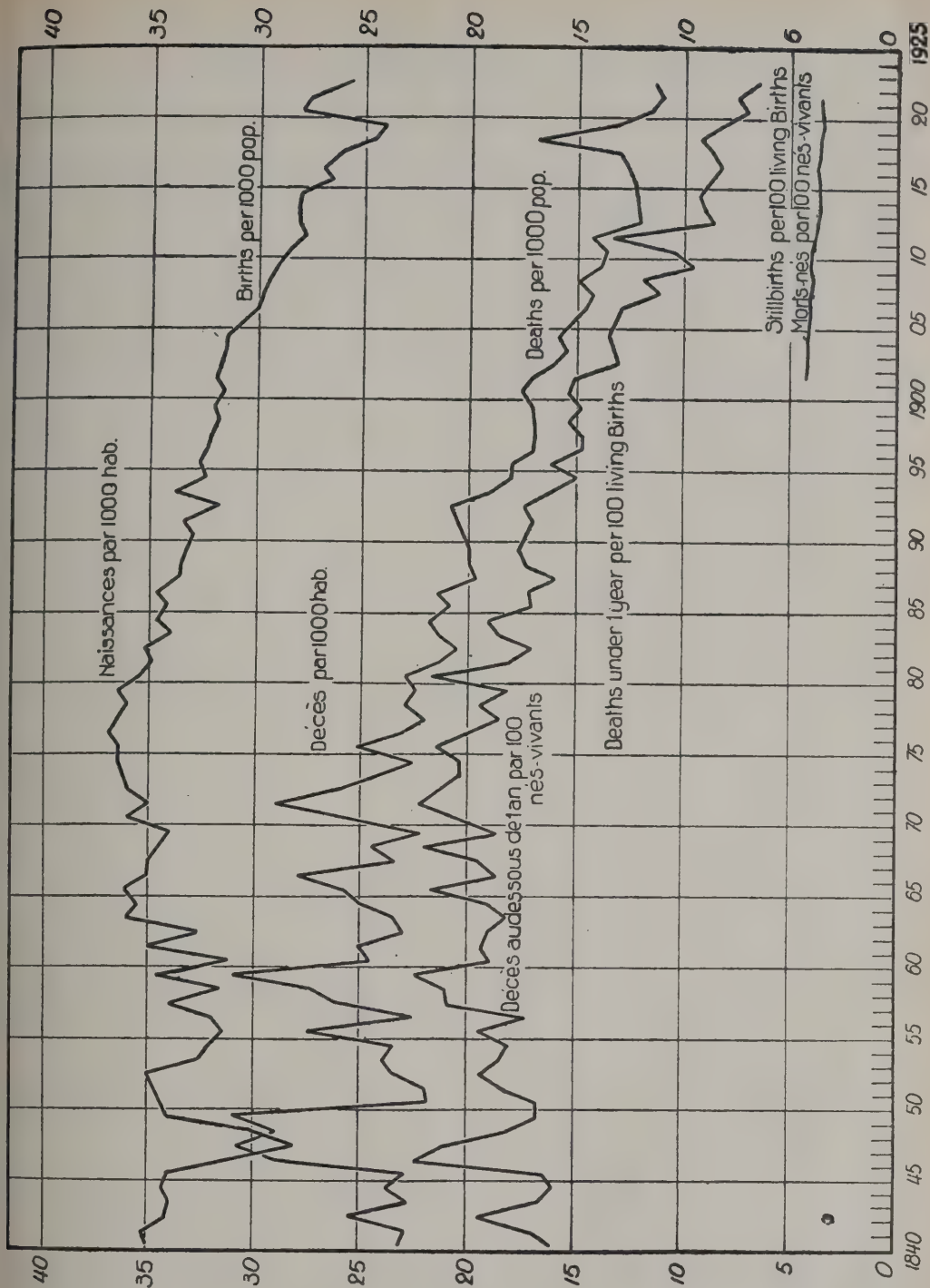
Males.	Females.	Total population.
3,410,262	3,455,052	6,865,314

Records in Population Registers, December 31st, 1920.

Males.	Females.	Total population.
3,449,264	3,477,050	6,926,314

Information regarding the registers of births, deaths, etc., in greater detail may be found in the succeeding pages.

Births. Deaths. Infantile Mortality. Still births. — 1840-1922.



6. THE REGISTRATION OF LIVE BIRTHS.

Procedure.

Registration of live births has been compulsory in the Netherlands since 1850, failure to comply with the regulations in force being a punishable offence against the State.

In each commune an " *officier de l'état civil* ", i.e., the burgomaster or his deputy is responsible for the safe custody of the registers of births, and the sole authority competent to receive and inscribe all such declarations, and to draw up the *acte de naissance*.

The law prescribes that the declaration of a birth must be made within three days of that birth, the responsibility of declaration resting primarily upon the father of the child, or in his absence or default, upon the attending physician, midwife, or other person or persons present at the birth.

The birth certificate is drawn up at the time of declaration and signed by the declarant and two witnesses.

For the drawing up of the birth certificate,

the registrar requires for each child :

- | | |
|--|-------------------------------|
| 1. Date of registration. | 3. Place of birth, town, etc. |
| 2. Date of birth — hour,
day, month and year. | 4. Name or names. |
| | 5. Sex. |

For the parents (when child born out of wedlock, of the mother only) :

1. Names of both parents, age, and place of birth.
2. Profession or calling, if any.
3. Address.

For the declarant and the two witnesses :

- | | |
|-----------|----------------|
| 1. Names. | 3. Profession. |
| 2. Age. | 4. Address. |

In order to make it possible to complete for statistical purposes a *card* of a live-born child, the registrar requires :

1. The religion of the child and of the parents (or of the mother only).
2. Whether the delivery took place in the presence of a doctor or midwife or without obstetric aid.
3. Whether the child was the result of a single or a multiple birth; and in the latter case, how many males and females were live-born and how many males and females were still-born.
4. Whether the live-born child was the first-born of the mother.
5. For children born out of wedlock, the civil state of the mother.

In a great number of communes a larger or smaller number of questions is added besides, for purposes other than statistical. Hereafter follows a translation of the schedule, which must be filled up and forwarded to the registrar of births at The Hague.

Notifications of births should be made in conformity with the law to the Civil State Officer, in presence of two witnesses, WITHIN THREE DAYS following the confinement, *Sundays not included*¹. The Civil State Office is open to the public on the FIRST FIVE WORKING DAYS of the week from 9 to 2 o'clock, on SATURDAYS from 9 to 12 and on Good Fridays from 9 to 10.

In cases of PROVED NECESSITY, if a declaration has to be made on a Sunday or holiday, apply to the office-keeper at the Town Hall between 8.30 and 9.30 a.m.

- | | | |
|--|---|--------|
| (a) Date of declaration. | This (a) | 192... |
| (b) Sex of child. | The birth of a child of the (b) | |
| | sex is hereby notified for entry in the | |
| | Civil Status Register of The Hague, | |
| | named | |
| (c) The <i>christian names</i> of the child must be given in full. | (c) | |
| (d) State whether the birth is <i>single</i> , <i>twin</i> , <i>triple</i> or <i>quadruple</i> and whether the child is <i>still alive</i> . | (d) | |
| (e) Date and hour of birth. | Born on (e) | |
| (f) Christian names and surname of father (in full) ; if the child is illegitimate, strike out these words and the following. | the father being (f) | |
| (g) Occupation, <i>position</i> therein and address (street and number). | Born at on 19 | |
| (h) Christian names and surname of mother (in full). | (h) | |
| (i) Occupation of mother and, <i>if child is illegitimate</i> , address of mother, also whether mother is <i>spinster</i> , <i>widow</i> or <i>divorced</i> . | Born at on 19 | |
| The birth took place in the presence of a | (i) | |
| | doctor | |
| | midwife or without obstetric aid. | |
| (k) Is the child the first-born of the mother ? | (k) | |
| (l) Did the confinement take place at the mother's residence ? | (l) | |
| Religion of { father | | |
| { mother | | |
| { child | | |
| (m) Where and when did the marriage take place ? | (m) | |
| If the child's mother is not married, state : <i>illegitimate</i> . | Married at on | |
| (n) The notification should be made by the father or by the doctor, midwife, or other person who was present at the birth ; or, if the confinement took place away from the mother's home, by the person at whose house it took place. | The notification was made by (n) | |
| | aged ; occupation : | |
| | residing at | |
| (o) The <i>Christian names</i> , <i>surnames</i> and addresses of the two <i>witnesses</i> must be given in full. | Witnesses (o) | |

¹ The following are regarded as holidays : *New Year's Day*, the *Christian Easter Monday*, *Pentecost*, *December 25th and 26th*, *Ascension Day* and the *Queen's Anniversary Festival*.

In notifying a birth, the *marriage certificate* (*wakte* or *boekje*) of the parents should be produced, and it is important that the notification should be accurate and detailed, particularly as regards christian names and surnames ; the witnesses must be of age and domiciled in the Kingdom.

For statistical purposes, male births are recorded upon *red* cards and female births upon *white* cards, examples of these cards, and the information they require for completion, being illustrated below.

A. 3.

For particulars see list.

Commune (see 2a)*

Card for a Live-born (Boy or Girl).

(To be sent in with the statistics for the month in which the child was born.)

No. of Document.

1 } In wedlock.
Out of wedlock.

The declaration was made on 192

The birth took place on 192
at a.m. (or p.m.).

Declared religion of child

Actual address given of child (see 2b)

The delivery } in the presence of doctor
took place¹ } midwife
without obstetric aid.

The child was the result of a { single birth
twin birth
triple birth
quadruple birth

of which males and females were live-born.

(See document No.)

of which males and females were still-born.

(See document No.)

Is the child the mother's first-born ?¹ Yes
No

¹ Strike out what does not apply.

Over

Reverse side of Live-birth Card.

In the case of a birth *in wedlock* the following information must be given regarding the *parents* (or in case of birth *out of wedlock*, regarding the *mother* only) (see also 2e).

	Father.	Mother.
1. Actual address
2. Place of birth (see 2c)
3. Day, month and year of birth
4. Religion
5. Occupation and position therein (see 2d)

In the case of a birth *out of wedlock* the following additional information must be given regarding the *mother* :

The mother was¹ { Unmarried.
Widowed.
Divorced.

¹ Strike out what does not apply.

* For reference, see page 26.

Transmission of Data.

At regular monthly intervals, the communal authorities are required to transmit completed cards of births to the Central Bureau of Statistics, particulars of the cards despatched being entered upon a special form provided for this purpose and of which the following is a specimen :

A. 1.

Birth cards are sent in for all children born in the month to which the list refers, even if the notification was not made until the following month.

List of Cards for Live Births registered.

Province :

Commune :

Despatched : 192

Herewith are sent cards giving returns as to *live births* in the month of 192 , namely :

..... red cards (for males).

..... white cards (for females).

These returns refer to Documents Nos. ... to ... inclusive in the Register of Births.

Documents Nos. are not included, because the births registered under these numbers took place in the month of and the cards referring to these births have therefore already been included in the previous returns.

Documents Nos. are not included because the births registered under these numbers took place in the month of and the cards referring to these births will therefore be included in the returns for the following month.

Further, Documents Nos. are not included because they refer to recognitions of natural children, changes of name or corrections of birth certificates.

Name of official under whose supervision the returns were filled in and despatched.

.....

(Reverse side of Form A 1).

Instructions regarding Cards for Live Births.

1° Birth cards must *only* be filled in for live births of children *born within the commune*.

For *males* red cards and for *females* white cards are to be used.

No cards are to be filled in for children *born outside the commune*, even if the parents belong to the actual population of the commune.

2° In filling in these cards, the following rules must be observed :

- (a) The name of the *commune* in which the notification is made must be given in full.
- (b) The name of the commune is to be filled in here *in full*, also the child's actual domicile, *even when the commune in which the child is born is also the commune in which it is normally domiciled*. In the case of births of children of foreign nationality, the name of the country must also be stated.
- (c) In the case of parents born abroad, the name of the country of birth must also be stated.
- (d) The occupation of the parents must be stated as fully as possible so as to show not only the special capacity or employment, the branch of trade or industry, art or science followed, but also the parents' precise rank or status (*e.g.* master, foreman, clerk, servant, etc.). If the parent occupies more than one profession or calling, the principal occupation should be notified (*i.e.* the profession to which the person in question attaches most importance).
- (e) If the father (or mother at childbirth) dies before declaration of the birth of the child has been made, the information under (1) to (5) must still be given, with the addition of the word "deceased".

RETURN OF PERSONS entering or leaving (the commune) during the month of
..... 192 .

(The same month to which this list of cards of live births refers.)

Entering.		Leaving.	
Males.	Females.	Males.	Females.

The Central Statistical Bureau, after receipt, scrutiny, and tabulation of such records, publishes the results in the official publications which are described hereafter.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION RELATING TO LIVE BIRTHS.

Statistiek van den loop der Bevolking van Nederland.

The under-mentioned information is supplied :

(a) Mean birth-rates for decennial periods, 1840-1919, and yearly since 1919, for each province and for communes grouped as follows¹:

. Communes having more than 100,000 inhabitants.

»	50,001 - 100,000	»
»	20,001 - 50,000	»
»	5,001 - 20,000	»
»	5,000 inhabitants or less.	

(b) Birth-rates for the year under review, grouped communes.

(c) Absolute figures of births for decennial periods 1840-1919 and yearly since 1919, indicating sex, legitimacy, proportion of male to female births, and illegitimate births (the latter also for quinquennial periods) and for grouped communes for the year under review.

(d) Twin and multiple births, indicating sex. For quinquennial periods 1901-1919 and yearly since, proportion of multiple to all births, indicating legitimacy.

(e) Indication of births of first children or otherwise, giving proportion of male to female births, for each province and grouped communes.

(f) Births during the year under review, indicating sex, legitimacy : absolute figures for the year for each commune, each province and for grouped communes, together with totals for the Kingdom yearly since 1912.

(g) Single, twin, and multiple births — totals only, indicating legitimacy, for each province and grouped communes, and for the Kingdom since 1912.

(h) Indication of civil status of mothers of illegitimates, for each province and grouped communes.

¹Wherever reference is made to " grouped communes ", it will indicate similar population distribution.

(i) Multiple births, indicating legitimacy at birth, and sexes. For each province, grouped communes, and the Kingdom since 1912.

(k) Births of twins, indicating whether firstborns or not, and legitimacy. For each province, grouped communes, and for the Kingdom since 1912.

(l) Single, twin, and multiple births, absolute figures and sex. For each province, grouped communes, and for the Kingdom since 1912.

Maandschrift van het Centraal Bureau voor de Statistiek.

(a) Birth-rates for the month, for the same month in the year preceding, rates 1914-1922, 1914-1923.

(b) Total births for each province, grouped communes, and for communes more than 20,000 inhabitants. Rates per 1,000 inhabitants, and numbers of illegitimate births.

Jaarcijfers voor het Koninkrijk der Nederlanden.

(a) Children under one year, by sex, for each census since 1830. Absolute and comparative figures.

(b) Births by sex and legitimacy, series of years, varying from 3 to 5.

(c) Multiple births, indicating two males, two females or one child each. Annual absolute figures.

(d) Annual percentage of illegitimate to total births by sex.

(e) Births each province and grouped communes, totals only over a series of years, rates per 1,000 population, rates illegitimates to all births.

(f) Birth-rates for each of the four principal communes, e.g. Amsterdam, Rotterdam, The Hague, and Utrecht, total births by sex and legitimacy for the same communes.

Maandcijfers van het Centraal Bureau voor de Statistiek (annually).

(a) Births, absolute figures, monthly ; legitimate and illegitimate by sex, grouped communes, provinces and the Kingdom.

(b) Birth-rates, monthly, per 1,000 of the population, for provinces, grouped communes, and for the whole Kingdom.

- (c) Legal "first-births", i.e. born in wedlock, both live- and still-births, by grouped communes, provinces, and the Kingdom. Absolute figures.
- (d) As in (c) above for births other than firstborns.
- (e) As in (c) above for illegitimate firstborns.
- (f) As in (c) above for illegitimates other than firstborns.

Special Publications of the Central Statistical Bureau (published at irregular intervals).

- (a) Summary of live-births, children born in wedlock, tabulated according to religious belief of the parents, 1906-1910.
- (b) As in (a) above for all births during the same years.
- (c) Summary of births out of wedlock, with indication of the religious belief of mother, 1906-1907.
- (d) Summary of births tabulated according to the profession or calling of the father, 1906-1909.
- (e) Average births in wedlock, annually, calculated per 1,000 married women below 50 years of age, 1850-1920, for provinces, the five principal communes, and for the Kingdom.
- (f) First-born children and children not first-born, born in wedlock, and tabulated by months for the years 1907-1918.
- (g) As in (f) above for children born out of wedlock.
- (h) Live- and still-births of children born both in and out of wedlock, indicating sex and nature of obstetric aid, 1909-1917.
- (i) Summary of live-births in wedlock, calculated per 1,000 married women, each commune, province, and the Kingdom, 1908-1911.
- (j) Numbers of children born in wedlock during the period 1909-1910, indicating religion of the mother, and calculated per 1,000 married women below 50 years of age, each religious cult.
- (l) Live- and still-births, children born both in and out of wedlock, indicating sex and time of birth, 1909-1910.

7. REGISTRATION OF STILL-BIRTHS.

PROCEDURE.

The actual procedure of declaration for registration purposes is similar to the already described for "live births", though the compulsory registration of still-births has been established only since the year 1839.

DEFINITION OF STILL-BIRTH.

It should be pointed out that "still-born" children in The Netherlands include

Children born prematurely and dead.

Full-term children born dead.

Children born alive, but dying before registration (*i.e.* three days), these being registered in the register of deaths with the endorsement "Presented dead".

Besides the information as for a live-birth, the registrar requires for a still-birth

1. The period of gestation.
2. Whether the child was born dead or whether the child had breathed and, if so, for how long (..... days).
3. The presumed cause of death.

For instructions see List.

C. 13 for Girls.

COMMUNE (see 2a).*

Card for still-born male child.

(To be sent in with the statistics for the month in which the child was *born*.)

No. in death	} In wedlock.
register.....	

Notice of registration was given on 192

The birth took place on 192

at o'clock a.m.
p.m.

Commune to the actual population of which the mother of the still-born child belongs (see 2c).

The delivery took place' } in the presence of a doctor
 } midwife
 } without obstetric aid.

The age of the foetus was estimated at months

The child ¹ *was still-born.*

Lived for	less than 1 day	3-4 days
	1-2 days	4-5 "
	2-3 days	5-6 "

Cause of death:

The still-born child was born of a⁴ $\left\{ \begin{array}{l} \text{single birth} \\ \text{twin birth} \\ \text{triple birth} \\ \text{quadruple birth} \end{array} \right.$

of which male and female children were born alive (see Register No(s).....).

of which male and female children were still-born (see Record(s)
No(s).....).

Was the still-born child the firstborn of the mother ?	Yes	No.
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	10
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
33	33	33
34	34	34
35	35	35
36	36	36
37	37	37
38	38	38
39	39	39
40	40	40
41	41	41
42	42	42
43	43	43
44	44	44
45	45	45
46	46	46
47	47	47
48	48	48
49	49	49
50	50	50
51	51	51
52	52	52
53	53	53
54	54	54
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56	56	56
57	57	57
58	58	58
59	59	59
60	60	60
61	61	61
62	62	62
63	63	63
64	64	64
65	65	65
66	66	66
67	67	67
68	68	68
69	69	69
70	70	70
71	71	71
72	72	72
73	73	73
74	74	74
75	75	75
76	76	76
77	77	77
78	78	78
79	79	79
80	80	80
81	81	81
82	82	82
83	83	83
84	84	84
85	85	85
86	86	86
87	87	87
88	88	88
89	89	89
90	90	90
91	91	91
92	92	92
93	93	93
94	94	94
95	95	95
96	96	96
97	97	97
98	98	98
99	99	99
100	100	100

¹ Strike out what does *not* apply.

² See circular issued by Minister of Home Affairs, dated May 1st, 1911.

[See over.]

(Reverse side of Card C 12).

In the case of still-births *in wedlock*, the following information must be given regarding the *parents* (in that of still-births *out of wedlock* only regarding the *mother*¹ (see also 2e).

	Father	Mother
1. Actual residence
2. Birthplace (see 2c)
3. Day, month and year of birth
4. Religion
5. Vocation and position (see 2d)

In the case of a child born out of wedlock the following additional information must be given regarding the mother :

The mother was ² { a spinster.
widow.
divorced.

¹ See information on birth inventory form.

² Strike out what does *not* apply.

Transmission of Data.

* The completed cards are forwarded monthly to the Central Bureau of Statistics in the manner already described in previous pages under "Live Births", the results information published by the Bureau being as follows :

OFFICIAL PUBLICATIONS CONTAINING INFORMATION RELATING TO STILL-BIRTHS.

Statistiek van den loop der Bevolking.

(a) Still-births, sex, legitimacy, proportion of illegitimates per 100 births decennial periods 1840-1919, yearly since, and for grouped communes, also proportion of illegitimates per 100 births quinquennially 1901-1920, and yearly since.

(b) Proportions illegitimates per 100 births 1840-1919 and yearly since, by province.

(c) Multiple births "presented dead", sex, quinquennially 1900-1919 and yearly since, and rates per 100 births.

(d) Indication of firstborns "presented dead", rates only for each province and groups of communes, and yearly for the Kingdom 1912-1921.

(e) Children dead at time of declaration of birth, by sex and legitimacy, for each province and commune, and for grouped communes, and for the Kingdom for each year since 1912.

(f) Still-births and indication of civil status of the mother, for each province and grouped communes.

(g) Multiple births, still-births, sex, and whether birth produced two males or two females or one of each sex.

(h) Still-births, for each province, grouped communes and for the Kingdom, yearly since 1912, indicating single, twin or multiple births, by sex.

Jaarcijfers voor het Koninkrijk der Nederlanden.

- (a) Infants "presented dead", totals, and rates per 1,000 births yearly.
- (b) Yearly totals children "presented dead" for each province and for grouped communes, together with rates per total births.
- (c) Yearly totals children "presented dead" and rates with distribution of sex Amsterdam, Rotterdam, The Hague and Utrecht.

Maandcijfers van het Centraal Bureau voor de Statistiek.

- (a) Monthly rates of still-births, calculated per 1,000 total births registered.
- (b) Children "presented dead", absolute figures and rates per 1,000 births, communes exceeding 20,000 population and for grouped communes, and for each province.

Statistiek van de Sterfte, etc. (annually).

- (a) Absolute figures and rates for each province and for communes exceeding 100 inhabitants, and for groups of communes.
- (b) Still-births, absolute figures each province, grouped communes and for communes exceeding 20,000 population; indicating: disease (if any) of father or mother, disease of the placenta, hydrocephalus, monstrosity, etc., circumstances of birth, other particulars affecting birth, cause unknown. Absolute figures each commune and province, indicating probable disease or cause of still-birth.
- (c) Number of still-births per 1,000 births registered. Decennially 1840-1919; the latter year annually.
- (d) Number of still-births, quinquennially 1910-1919, thereafter annually, for grouped communes.
- (e) Still-births with indication of sex and probable period of gestation. For the Kingdom.
- (f) Still-births with indication of sex and nature of obstetric aid given the mother. For grouped communes, provinces, and the Kingdom. Absolute figures also calculated per 100 births.
- (g) Still-births, with indication whether actually stillborn or deceased before registration; if so, period of separate existence. For grouped communes, provinces and the Kingdom.
- (h) Still-births, with indication of probable cause of still-birth, by sex. Quinquennially 1901-1919, thereafter annually for the Kingdom. Also percentage of still-births per total registered births.
- (i) As in (h) above but no indication of sex.
- (k) As in (h) above annually for the Kingdom since 1918; no indication of sex, but indicating whether stillborn or deceased before registration of birth.

Maandcijfers (annual).

- a) Numbers of still-births, absolute figures by sex and legitimacy, given annually for grouped communes and provinces.
- b) Still-births per 1,000 births, monthly, for provinces and grouped communes.

8. THE REGISTRATION OF DEATHS.

Procedure.

The registration of deaths has been compulsory in the Netherlands since the year 1815, the communal registrar ("officier de l'état civil") being the sole competent authority for drawing up the death certificate, inscribing the record of death, and issuing the authorisation for burial. As burial is impossible without this permission, few, if any, deaths escape registration.

Since, under the existing laws, a burial *may not* take place within thirty-six hours after death, and may not be delayed beyond the fifth day after death (see below), there can be no delay in the declaration of a death, since the authorisation for burial can only be issued after declaration has been made. Failure to comply with the regulations may result in the imposition of a fine not exceeding 100 gulden.

Burial Certificate.

The Civil State Officer at The Hague authorises the burial at the
Cemetery

of the remains of

aged died on 192.....

The Hague, the 192.....

(Signed)

Civil State Officer referred to above.

N.B. — Burials must not take place earlier than thirty-six hours or later than the fifth day after death (Article 6 of the Law of April 10th, 1869).

All deaths are required to be certified by the medical practitioner who attended the deceased during his last illness. In the case where a death occurs without medical attendance, the body has to be seen by the "médecin de l'état civil", who supplies the necessary certificate.

Only *one* cause of death appears on the death certificate.

The death certificate drawn up at the time of declaration shall contain :

1. Surname and christian names, age, occupation, address of the deceased, as well as the day and the hour of death.

2. The surname and christian names of the husband or wife, if the deceased is either married or widowed.

3. Surname and christian names, age, occupation and address of the declarants and, in case of relationship, the degree of relationship.

4. If possible, the death certificate shall contain, besides the surnames and christian names, the occupation and the address of the parents of the deceased, as well as their birthplaces.

In order to make it possible to draw up for statistical purposes the death-card, registrar requires besides :

1. Place where the death took place.
2. Civil status of the deceased.
3. His religion.
4. Previous occupation of the deceased.
5. Occupation of the head of family of the deceased.
6. For deceased under one year, whether the child was born in or out of wedlock.
7. Whether the child was breast-fed, and if so, for how long.

In a great number of communes a larger or smaller number of questions are put des, for other than statistical purposes. Hereafter follows a translation of the dule, which must be filled up and forwarded with the medical certificate to the star of deaths at The Hague.

In order to obtain authorisation for burial a medical certificate of death and the immediate cause of death must first be presented.

To be filled up.

- | | |
|--|--|
| Date of declaration (a) | This (a) 192... |
| (b) Christian names and surnames, age, profession and domicile of both declarants, indicating relationship if they belong to the family. | The undersigned hereby notify for entry in the Civil Status Register of The Hague the death of |
| (c) Christian names and surname of deceased (in full). | (c) |
| (d) Occupation of deceased, previous occupation and occupation of head of family. | (d)
In the case of deceased males between the ages of 18 and 55, state also whether they belonged to the militia or reserve.
<u>No</u>
Yes. |
| (e) In the case of still-births, state sex, and whether the child is the result of a single, twin or triple birth. | (e) |
| (f) Date and time of death. | Died on (f). |
| (g) Domicile of deceased (Legal domicile). | Domiciled at (g). |
| (h) Street and number of the house at which the death took place. | No..... Street (h). |

- | | |
|---|-------------------|
| (i) Age of deceased. | Aged (i)- |
| (k) Place, year and date of birth. | Born at (k) |
| | on |
| (l) Husband, widower or widow, previous widower or widow of giving Christian names and surname in full and profession, if any. | (l) |
| (m) Place and date of marriage, if any, or bachelor. | (m) |
| (n) Christian names and surnames of parents of deceased, whether still alive, and, if so, what is their occupation and domicile ? | (n) |
| (o) Religion of deceased. | (o) |
| (p) Number of children alive. | (p) |
| (q) Did the deceased leave any immovable property ? Had he or she the income from property or capital ? Did he or she possess property or capital in trust, which on his or her decease would pass to third parties ? | (q) |
| (r) Had the deceased a communal or State pension ? The <i>pension certificate must be produced</i> . | (r) |
| (s) Had the deceased received the Dutch Order of the Lion, the Order of Orange-Nassau, the Medal of Honour of the Order of Orange-Nassau or the Militaire Willemsoorde ? | (s) |
| (t) Christian names and surname of one of the heirs who is of age, and, if all the heirs are minors or in ward, the name of the guardian. | (t) |

Cemetery

N.B.— It is important that the christian names and surnames should be written clearly and correctly.

The declarants must be of age and domiciled in the Netherlands. This form must be signed by one of the relatives of the deceased.

The declaration may be made at the Civil Status Office in the Groote Halstraat, above the Population Registration Office, on the first five working days of the week from 9 to 2, on Saturdays from 9 to 12 and on Good Fridays from 9 to 10.

The following are regarded as holidays : New Year's Day, the Christian Easter Monday, Pentecost, December 25th and 26th, Ascension Day and the Queen's Anniversary Festival. In cases of *proved necessity*, if a declaration has to be made on a Sunday or holiday, apply to the office keeper at the Town Hall, between 8.30 and 9.30 a.m.

Cards for Age Groups.

The information required for a deceased person is afterwards entered upon special death cards, of ten different colours to indicate the different age groups, namely :

0- 1 year ... grey.	30-39 years ... orange.
1- 4 years ... yellow.	40-49 » ... bluish grey.
5-14 » ... green.	50-59 » ... light green.
15-19 » ... cream.	60-79 » ... rose.
20-29 » ... blue.	80 and over.... violet.

One of these cards is exemplified below :

C. 7. **Death in the Commune of** (see 2a)*

Sex { Male.
Female.
Single.
Married.
Divorced.
Separated.
Unknown.

Civil status

Age group 30-39 year.

Religion

Day, month and year of death

Place where death occurred (see b)

Commune and population to which deceased belonged (see c)

Day, month and year of birth

CAUSE OF DEATH

Name²
No. of cause on Detailed International List³
No. of cause on Abridged International List³

* Strike out what does not apply.

² See heading in the circular letter to doctors from the Minister of Labour, dated May 1st, 1922.

³ To be left blank if the card refers to a person who has died without medical attendance.

(Reverse Side of Death Card.)

- A. Office, profession or occupation of the deceased. ¹
- B. Previous office, profession or occupation of the deceased. ²
- C. Office, profession or occupation of head of family of deceased. ³

¹ See letter (d) of instructions on back of list for death cards.

² " " (e) " " " " " "

³ " " (f) " " " " " "

Article 6 of the Law of 1869, amended by the Law of 1919, stipulates that no interment can take place before thirty-six hours after death, nor be delayed beyond five days after death, though exceptions may be made to this regulation by the Mayor consultation with the doctor.

Article 4 of the above Law provides that no interment can take place without the written authority of an "officier de l'état civil", to obtain which it is necessary to produce a certificate of *cause* of death. Article 5 of the Law of June 1st, 1865, reads:

"The doctors shall sign a certificate for the municipal authority, indicating as precisely as possible what is, in their opinion, the cause of death, with due observance, however, to the oath of secrecy incumbent upon them. They shall not give this certificate unless convinced by personal examination of the cause of death."

Transmission of Data.

The certificate referred to is enclosed in an envelope provided for the purpose, which the physician himself seals, appending his signature across the sealed flap to ensure absolute secrecy in transit. This envelope is *not* opened by the communal registrar, but only in the local health department.

Death Certificate.

The persons notifying death are requested to state accurately :

Deceased's	{	Surname
		Christian name
		Wife (widow) or husband of
		Age
	{	House in which death took place
		Date of death

Declaration in pursuance of Article 5 of the Law of June 1st, 1865 (State Gazette 60).

The undersigned, being a medical practitioner, declares that the cause of the death of the above-mentioned person was :

.....
.....

Died without medical treatment, but apparently owing to
Is there any ground for believing that death was due to violence?.....

STILL-BIRTHS.

Period of gestation
What is considered to be the cause of death ?.....
.....

Continuation.]

The confinement was attended by a doctor

midwife.

without obstetric aid.

The age of the foetus was probably months and it was '.

Stillborn.

lived for {	less than 1 day	3-4 days.
	1-2 days	4-5 days.
	2-3 days	5-6 days.

DEATHS OF CHILDREN BEFORE THE AGE OF ONE YEAR.

Was the child breast-fed ?

(Answer "Yes", "No" or "Not known".)

If so, how long ?

(If not known exactly, give an estimate, followed by the letter "S"— *schatting* = estimate.)

(Circular issued by the Ministry of Home Affairs, November 25th, 1920, No. 13200, 1 Sect. B. B.)

The Hague, 192 .

N.B. — Please write *clearly* when filling in cause of death.

Strike out what does *not* apply.

(Envelope.)

The doctor is requested to place the certificate of cause of death in this envelope and to append his signature across the sealed flap.

To :

.....

at

.....

As all computations and classifications of deaths are carried out at the Central Bureau for Statistics, the communal authorities are required at regular monthly intervals to transmit to the Central Bureau all death cards completed during the month, the special form used for this purpose being as follows :

C. 1. *Death Cards are sent in for all persons who died during the month to which the list refers, even if notice of death was not given until the following month.*

List of Death Cards and Cards for Notified Still-births.

Province
Commune
Month
Despatched

This form refers to the cards containing information regarding deaths and still births which occurred in the month of 192 , as follows :

..... Blue	cards for stillborn males.	
..... Yellow	» » females.	
..... Grey	» deaths at the age of less than 1 year.	
..... Yellow	» deaths between the ages of 1- 4 years.	
..... Green	» »	5-14 »
..... Cream	» »	15-19 »
..... Blue	» »	20-29 »
..... Orange	» »	30-39 »
..... Pearl-grey cards	»	40-49 »
..... Light green	» »	50-59 »
..... Red cards	»	60-79 »
..... Violet	» »	80 and over and age unknown.

The notices run from Certificate No. to Certificate No.
(inclusive) of the Register of Deaths.

Numbers are missing, because the deaths entered under those numbers took place in the month of and the cards referring to these cases have already been included in the previous consignment. Numbers are also missing, because the deaths referred to therein took place in the month of and the cards referring to these deaths will therefore be added to the lists for the whole month.

The following numbers are also missing, because they refer to persons who have died elsewhere and who

(a) Have their actual residence and legal domicile
.....
.....
(b) Their legal domicile only
.....
in this Commune.

Name of official
under whose supervision the cards
have been filled in and despatched.

(Reverse side of C. 1.)

Instructions regarding Death Cards and Cards for Still-births.

1. Death cards are filled in *only* for persons who have died *within* the Commune, but *not* for those who have died elsewhere, even though they were actual inhabitants of the Commune. In the latter case, the only certificate numbers to be filled up are those in which the death certificates are entered in the last column of the front page of the list. Death cards are divided up as follows :

Deaths at the age of less than 1 year.	Green	Card No. 2
Deaths between the ages of 1-4 years.	Yellow	" No. 3
" 5-14 "	Green	" No. 4
" 15-19 "	Cream	" No. 5
" 20-29 "	Blue	" No. 6
" 30-39 "	Orange	" No. 7
" 40-49 "	Pearl grey	" No. 8
" 50-59 "	Light green.....	" No. 9
" 60-79 "	Red	" No. 10
" 80 and over and age unknown	Violet	" No. 11

Cards must be filled in in the case of *still-births* (irrespective of whether the mother belongs to the actual population of the Commune or not).

For stillborn males, *blue* cards are filled in, and for females, *yellow*.

2. In filling up these death cards, the data for which are entirely obtained from the replies to the questions on the cards, the following points must also be noted :

(a) The name of the Commune in which the death took place must be given *in full*. (In the case of *still-births* the name of the Commune in which the birth was registered must also be given.)

(b) Here the district or division, street, etc. and number of the house must be filled in. If the death has taken place in a hospital, the district, etc., of the place of residence must be given as well.

(c) Here must be given in full the name of the Communes in which the deceased last resided, *even if the Commune in which the death took place was also that in which the deceased actually resided*. In the case of *still-births*, the name of the Commune to which the mother belonged must be filled in in full, even if such Commune is the same as that in which the birth was registered. If the mother belongs to a foreign country, the name of that country must also be given.

(d) As regards all persons of any age who are engaged in a vocation or occupation or in an official capacity, heading *A* must be filled in as accurately as possible, so as to show not only the nature of the office or service or the branch of trade or industry, art or science in which the deceased was engaged, but also the rank or capacity which he or she filled (master, foreman, clerk, servant, etc.), and the special activities in which the deceased was engaged. If the deceased was engaged in more than one vocation or occupation or held more than one office, only the chief occupation should be notified (*i.e.* the vocation to which the deceased attached most importance).

(e) In the case of persons who, at the time of their death, did not occupy any office and were without vocation or occupation, but had previously held an office or been engaged in a vocation or occupation, the heading *B* is filled up in the same manner as *A*.

(f) In the case of deaths of persons who have lived in a family *other than* the head of the family, being either husband, wife or child or a person, related or not, living with the family, the office, vocation or occupation (as in *C*) of the head of the family must be given as well as the information under *A* or *B*.

N.B.— In all such cases of persons living in families other than heads of such families, the office, vocation or occupation which they filled at the time of their death or previously should be entered under *A* or *B*, and also that of the head of the family under *C* (*i.e.* two returns must be made).

If such persons did not occupy any office and were not engaged in any vocation or occupation, this must be stated in *A* or *B*, and the office or vocation followed by the head of the family will then be given under *C*.

In the case of heads of families and of all persons living alone, the office, vocation or occupation of deceased should thus only be given under *A* or *B*.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION RELATING TO DEATHS.

Statistiek van de Sterfte naar den Leeftijd, etc.

The first feature of this volume is the tabular presentation of total deaths by population by sex, for each province and for grouped communes, together with the populations and deaths by sex for the Kingdom for each year since 1900.

Following this is given a complete and exhaustive exposé by the Director-General of the Central Bureau of Statistics upon the trend of mortality during the year, the influence of age, sex, infantile mortality, still-births, deaths without medical treatment and the causes of death.

The numerous tabulations offer the following information :

(a) Deaths by causes — Abridged International List¹ — and age groups², special reference to probable causes of still-births, deaths of children under two years of age from diarrhœa and enteritis, for each province and commune, together with still-births and deaths arranged for the Kingdom, for each month of the year. The age distribution is as follows :

0- 1 year	30-39 years.
1- 4 years	40-49 »
5-14 »	50-59 »
15-19 »	60-79 »
20-29 »	80 and over and age unknown.

The age distribution for children under two years with the cause of death from diarrhœa and enteritis being :

0-1 month	6 months to 1 year.
1-3 months	1 year to 2 years.
3-6 »	Totals.

¹ International List of Causes of Death 1920.

² It should be noted that prior to 1920 age groups were arranged as follows :

0- 1 year	30-39 years.
1- 4 years	40-49 »
5-13 »	50-64 »
14-19 »	65-79 »
20-29 »	80 years and over.

Following the agreement reached at the International Conference held in Paris in 1920, the groups for 1920 and onwards have become :

0- 1 year	40-49 years.
1- 4 years	50-59 »
5-14 »	60-69 »
15-19 »	70-79 »
20-29 »	80 years and over.
30-39 »	

The above arranged for communes :

Over 100,000 inhabitants.		
50,000	—100,000	»
20,000	— 50,000	»
5,000	— 20,000	»
5,000 inhabitants and less.		

b) As above, according to both the Detailed and Abridged International Lists of Deaths, indicating both sex and age, for communes of more than and less than 20,000 inhabitants, for five groups of forty-two communes, each province, and the Kingdom.

c) Numbers of deaths per 1,000, each sex, for the Kingdom since 1840.

d) Numbers of deaths according to age for the provinces and for the Kingdom, and percentage of total deaths according to age groups (see (a) above).

e) Annual percentage of the deaths in each age group in percentage of the population.

f) Deaths according to age groups for the Kingdom, decennially since 1899, calculated per 1,000 population.

g) Numbers of deaths of people of advanced age, calculated per 1,000 persons at the same age, decennially since 1899, the following age groups :

80-82.	89-92.
83-85.	92 and over.
86-88.	

h) Population and deaths by causes and sex (short International List) for the Kingdom.

i) Deaths by causes and sex (short list) quinquennially since 1901, calculated for the Kingdom, per 10,000 population.

k) Deaths by causes and sex, according to the Detailed International List, for the Kingdom. Quinquennially 1901-1920, and annually 1920, 1921, per 10,000 population.

l) Deaths due to cancer of the breast, according to age groups and civil status, calculated per cent of total deaths for each age group, for the Kingdom, in the following age groups :

30-39.	60-69.
40-49.	70-79.
50-59.	80 and over.

n) Deaths due to puerperal fever and diseases of pregnancy. Quinquennially since 1876, calculated per 1,000 births, for the Kingdom.

o) Total deaths due to various epidemic diseases, for the Kingdom and provinces. Quinquennially since 1870-1919, and annually since, calculated per 100,000 inhabitants.

(o) As in (n) above, for the Kingdom only, absolute figures by sex (monthly).

(p) Half-yearly summary of deaths due to epidemic diseases (see (o) and (n) above), periods October-March and April-September. Quinquennially since 1905 for the Kingdom only.

(q) Number of cases and of deaths due to smallpox, scarlet fever, enteric fever, diphtheria, cerebro-spinal meningitis. Quinquennially since 1894. Absolute figures given, without distinction of sex, for the Kingdom.

(r) Deaths without medical attention, by age groups and sex, for the Kingdom. Quinquennially 1905-1919 and annually since, calculated per 100 total deaths.

(s) As in (s) above, indicating causes but not sex.

Statistiek van den Loop der Bevolking, Nederland.

As in *Statistiek van de Sterfte* already quoted, the Director-General of the Central Bureau of Statistics reviews the mortality figures in this publication also, though less fully than in the former volume. The following information is available :

(a) Mortality rates per 1,000 inhabitants 1840-1919, and yearly since, for each province, five grouped communes, for the year under review, and for the Kingdom.

(b) Mortality according to sex, absolute figures, mortality per cent of the population, for each year since 1910, together with mean decennial rates 1840-1919, for each sex.

(c) Mortality according to civil status and sex, years 1910-1921, rates per cent of population decennial intervals, and for five groups of communes.

(d) Mortality by age per 1,000 living at the same age.

(e) Mortality by age, civil status, per 1,000 living at same age and civil status.

(f) Absolute figures of deaths by sex, for each province, groups of communes, and each commune, and for the Kingdom, each year since 1912.

(g) Absolute figures of deaths by sex, civil status, and according to year of life (1-101 years of life) for each province, five groups of communes, the four principal communes and for the Kingdom.

Overzicht der Huwelijken, der Geboorten en der Sterfte (monthly).

(a) Mortality rates per 1,000 inhabitants.

(b) Deaths of children under 1 year according to following age distribution:

0	— 1 week
1 week	— 1 month
1 month	— 3 months
3 months	— 11 months.

er deaths :

1- 4 years.	40-49 years.
5-14 years	50-59 years.
15-19 years.	60-79 years.
20-29 years.	80 years and over.
30-39 years.	Age unknown.

deaths by causes, according to the Abridged International List of Causes of Death.

The above information appears for each province, for forty-four communes the population of which exceeds 20,000 inhabitants, and for five groups of communes. Mortality percentages per 1,000 of population per month are also given.

Jaarcijfers voor het Koninkrijk der Nederlanden.

- (a) Total deaths and mortality rates per 1,000.
- (b) Mortality by sex, absolute figures and rates per 1,000 of the population for each sex.
- (c) Total deaths, yearly, each province, and for five groups of communes; absolute figures, and per 1,000 of the population.
- (d) Total deaths according to civil status and sex for each year and mortality rates.
- (e) Deaths according to age groups (see page 42 (a) and of children under one year, indicating legitimacy also, for each province, and yearly totals for the Kingdom, absolute figures and percentage of the total.
- (f) Causes of death, by sex, and according to the Abridged International List of Causes of Death, together with rates per 10,000 inhabitants, each sex, for each cause.
- (g) Mortality rates in the four principal communes, *e.g.*, Amsterdam, Rotterdam, The Hague and Utrecht, absolute figures and per 1,000 of the population.
- (h) Deaths, absolute figures, according to age groups, in Amsterdam, Rotterdam, The Hague and Utrecht, and in per 100 of the total.
- (i) Deaths by causes, Abridged International List, in the four principal communes (g) and (h) above, absolute figures and per 10,000 of the population.
- (k) Total deaths in prisons.

Maandcijfers (annually).

- a) Deaths by sex and civil status for each province, grouped communes, the Kingdom and the four principal communes (absolute figures for each month).
- b) Mortality per 1,000 of population for each province, grouped communes and the Kingdom for each month.

(c) Deaths by causes of death, without distinction of sex. Absolute figures for each month.

(d) Deaths by age groups without distinction of sex. Absolute figures for each month.

Special Publications of the Central Statistical Bureau (published at irregular intervals)

(a) Summary of births compared with population, and deaths of children under one year calculated per 100 living children, for periods 1880-1884, 1904-1908, 1913, 1914-1918, for communes, grouped communes, and for the Kingdom.

(b) Deaths during months August-July for periods 1913-1914, 1914-1915, 1915-1916, 1916-1917, 1917-1918.

(c) Deaths from tuberculosis 1905-1914 in communes having a population exceeding 100,000, compared with the Kingdom.

(d) Graphic representation of total deaths in each province for 1901-1909.

(e) Summary of deaths according to sex, age, and causes of death — Detailed International List — and religious belief during the years 1910 and 1909, for the Kingdom.

(f) As in (e) above for twenty-four communes having a population exceeding 20,000, for the provinces, and for the Kingdom.

(g) Quinquennial survey of deaths according to sex, age and causes of death — Abridged International List — for each commune.

(h) Deaths from tuberculosis in each commune, province, and in nine groups of communes, 1901-1908.

(i) Life-tables (every ten years) by sex, for the Kingdom and for the communes exceeding 20,000 inhabitants.

(k) Deaths of males (10-65 years of age) according to occupation, age and causes of death for the whole Kingdom (every ten years). Absolute figures and per 100 living in each occupation and age group.

9. INFANTILE MORTALITY.

General.

The information relative to infant mortality is remarkably complete, and few statistical departments provide so minute a tabulation of statistical information of interest and importance to the pædiatrist.

Attention is called to the fact that, unless specially mentioned, "stillborns" include a proportion of children born alive but dying before registration (*i.e.* within seven days of birth), such births being inscribed with the endorsement "Presented alive" and legally regarded as "stillborn".

Since in such countries as England and Wales, Norway, Sweden, Japan, etc., any child that has shown signs of a separate existence and survived for any time, however brief, is regarded as a "live birth", it follows that the Dutch method of computing infant mortality leads to a slightly more favourable rate of mortality than would be the case were the same facts presented on, say, the English system. It is, however, impossible to determine the effect of the different system of tabulation and calculation in this regard.

The special death card for children under one year contains the following information:

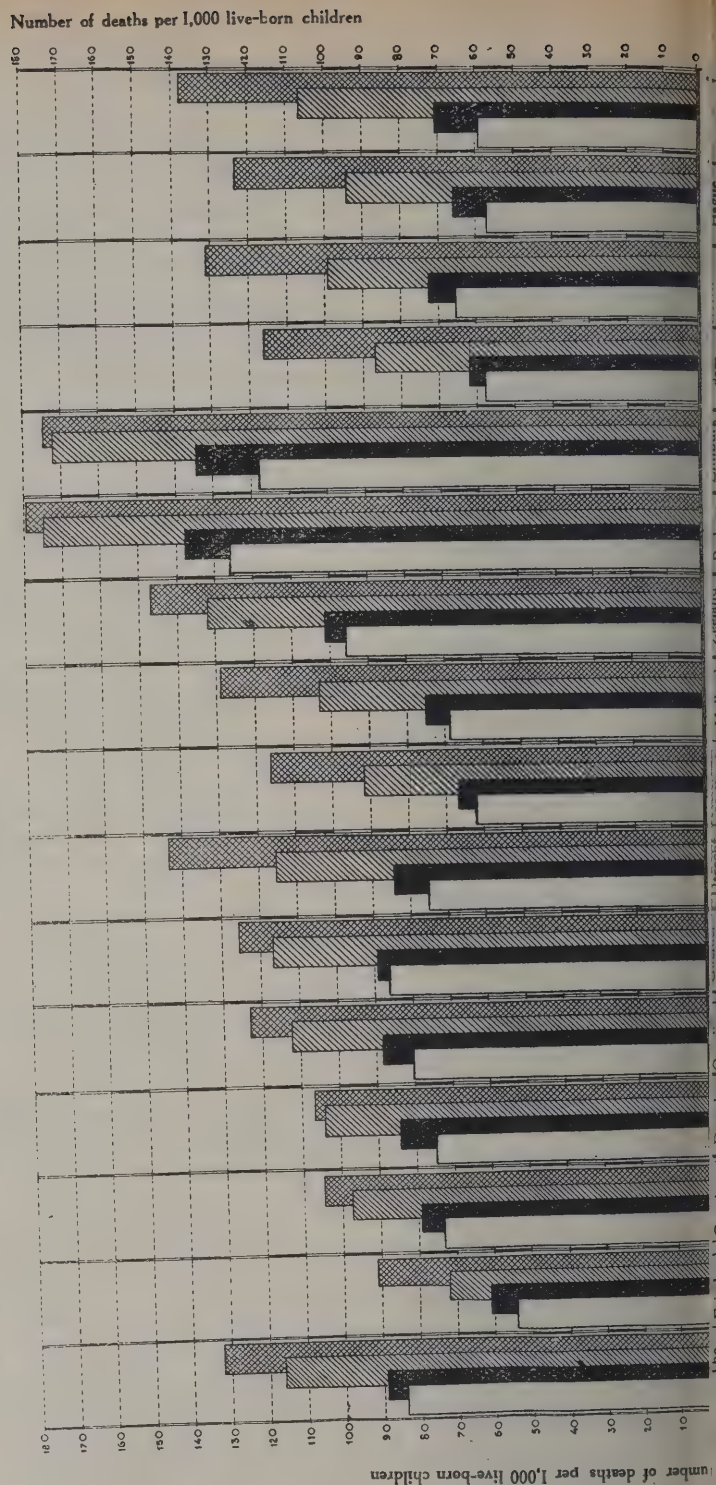
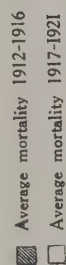
C. 2.		Death in the Commune of (see 2a)*	
No. of Document.....	Of the age of less than 1 year	Sex } Male. { Female.	Legi- { in wedlock { timacy { out of wedlock
Day, month and year of death		Religion	
Place of death (see b) .....		.....
Commune to population of which deceased belonged (see c) .....		.....
Day, month and year of birth.	CAUSE OF DEATH	Name ² ³	
		Number on Detailed International List ²	
		Number on Abridged International List ²	

* Strike out what does not apply.
² See the Circular of the Minister of Home Affairs of May 1st, 1922.
³ If the card refers to a person dying without medical attention this must be stated.

THE NETHERLANDS.

Infantile Mortality

Infantile Mortality (age 0-1 year) in the whole Kingdom, the Provinces and the Four Principal Communes during the Four Quinquennial Periods 1902-1921.



(Reverse side of Card C. 2.)

Profession, occupation, or calling of head of family of the deceased '

Was the child breast-fed ?

If so, for how long ?

(When period of breast-feeding is not exactly known an estimate must be given ; in this case please add " S " after the estimate.)

¹ See letter 2f* of instructions on the back of the Return of Death cards.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION REGARDING INFANTILE MORTALITY.

The information contained in the variety of tables in published official statistics is given below.

Statistiek van de Sterfte.

a) Deaths of children under two years of age from diarrhoea and enteritis, for each province and commune ; the age distribution as follows :

0-1 month	6 months-1 year.
1-3 months	1 year to 2 years.
3-6 months	Totals.

b) Causes according to the Abridged International List of Causes of Death for each province, four principal communes, grouped communes and for the whole Kingdom ; the latter according to the Detailed International List of Causes of Death, and the distribution as follows :

0-1 year.
1-4 years.

c) Children under one year, deaths for each month of the year, from causes occurring in infancy, for each province, forty-two communes the population of which is 20,000 and for five groups of communes, and for the Kingdom, absolute figures according to sex.

d) As in (c) above per 100 live-births.

e) Children under one year, deaths per 100 live-births for each province, grouped communes and for the Kingdom 1880-1919 ; quinquennially and yearly since.

For reference, see page 41.

Statistiek van den loop der Bevolking.

(a) Deaths of children under two years, indicating sex and legitimacy, for each province and five groups of communes, in the following age groups :

<i>Children under 1 year.</i>	<i>Children 1 year to 2 years.</i>
0- 1 month	12-14 months
monthly to 5 months	15-17 months
6- 7 months	18-20 months
8- 9 months	20-23 months
10-11 months	Totals.

Overzicht der Huwelijken, der Geboorten en der Sterfte, etc. (monthly).

(a) Deaths of children under one year, as follows :

- 0-1 week,
- 1 week to 1 month,
- 1 month to 3 months,
- 3 months to 11 months,
- 1 to 4 years —

the above for each province, forty-two communes having a population in excess of 20,000, and for five groups of communes.

(b) Mortality of infants under one year for each month, from diarrhoea and enteritis, and from maladies frequent in infancy, with indication of whether breast-fed or otherwise.

(c) Deaths of children under one year and under one month, diseases frequent in childhood, tabulated as follows :

<i>Ages in days.</i>	<i>Ages in months.</i>	
1 day	1 month	6 months
1- 7 days	2 months	7 »
8-14 days	3 »	8 »
15-21 days	4 »	9 »
22-30 days	5 »	10 »
		11 »

together with rates per cent of total deaths by months.

(d) Mortality of infants under one year, grouped by ages :

1 week	13-20 weeks
1- 4 weeks	20-39 weeks
4- 8 weeks	39-52 weeks
8-13 weeks	

indicating breast-fed or children otherwise fed for :

1 week	13-20 weeks
1- 4 weeks	20-39 weeks
4- 8 weeks	39-52 weeks
8-13 weeks	Unknown.

Maandcijfers.

- (a) Information as under (a) above, *Loop der Bevolking* (p. 50), monthly.
- (b) Children under one year, deaths per 1,000 live-births for provinces, grouped communes and the Kingdom (monthly).

Jaarcijfers voor het Koninkrijk der Nederlanden.

- (a) Deaths of children under one year indicating legitimacy ; deaths of children years. For each province, and for the Kingdom.
- (b) Mortality rates children under one year, indicating legitimacy, for each province and the Kingdom.
- (c) Deaths of children from diarrhoea and enteritis up to one year, and one to years, indicating sex.
- (d) Deaths in the four principal communes, *e.g.*, Amsterdam, Rotterdam, The Hague and Utrecht, absolute figures and rates of mortality :
- 0-1 year with indication of legitimacy ;
- 1-4 years, no indication of legitimacy ;
- mortality rates for each cause (Abridged International List) for the four communes mentioned.
-

10. MORBIDITY STATISTICS.

NOTIFIABLE DISEASES.

Under the Laws of June 1st, 1865, December 4th, 1872, and the amendments outlined in the Law of November 27th, 1919, the under-mentioned diseases are compulsorily notifiable. It should be noted that the provisions of the Laws permit the addition to, or deletion from, the existing list of diseases, while those marked * below are included year by year under the authority of a Royal Decree which is published annually.

Typhus.	Plague.
Typhoid.	Smallpox.
Diphtheria.	Scarlet fever.
Cholera,	*Cerebro-spinal meningitis.
*Encephalitis lethargica.	*Poliomyelitis.

Procedure.

Medical practitioners, heads of households, lodging-houses, masters of vessels, superintendents of institutions, prisons, workhouses, etc., must, under penalty of non-compliance, notify the burgomaster of the commune, within twenty-four hours of any case of notifiable disease within their sphere of responsibility.

No payment is made to medical practitioners for notifications.

Infected houses must display a placard, supplied by the burgomaster, who announces the presence of infection and the name of the disease ; this placard may only be removed until the dwelling has been officially declared clear of infection. During the period of quarantine, only the burgomaster and health officials, in pursuance of their duties, may visit infected dwellings.

No placard is exhibited for encephalitis lethargica, cerebro-spinal meningitis, poliomyelitis.

Children from infected homes may not attend school.

The burgomaster is empowered under the law to order the removal of infected persons for purposes of isolation, and to institute measures for the disinfection of infected premises.

Cards employed in Notification.

The official cards employed for notification of disease :

Smallpox	Yellow,
Cholera	Red,
Other diseases	White,

are illustrated hereafter.

Commune

Smallpox

Date of notification

Address, etc

Sex

Age

Occupation

(In the case of married women and children, state profession of head of family.)

Vaccinated or not ?

If so, was vaccination successful ? ...

Smallpox or modification of smallpox ?

Where treated

Mode of infection

When the supply of these cards is exhausted, the doctor is requested to apply for more.

The above case is certified by

..... Medical Practitioner.

Reverse Side of Card.

In pursuance of Article 6 of the Law of June 1st, 1865 (*State Gazette*, No. 60).

To the Inspector of Public Health

at

From Medical Practitioner.

Commune

Cholera

Date of notification

Address

Sex

Age

Occupation

(In the case of married women and children, state profession of head of family.)

Where treated

Mode of infection

When the supply of these cards is exhausted, the doctor is requested to apply for more.

The above case is certified by.....
..... Medical Practitioner,
at

Reverse side of Card.

Official

In pursuance of Article 6 of the Law of June 1st, 1865 (*State Gazette*, No. 60).

To the Inspector of Public Health for

at

From Medical Practitioner.

Card for Other Notifiable Diseases.

Commune Name of Disease

Date	Address	Sex	Age	Particulars of nature and cause of disease

Medical Practitioners are requested in the case of certain diseases and in certain communes to use special cards, and, if the supply of these is exhausted, to apply for more.

(Every case of smallpox or cholera must be entered on a separate card.)

The above cases are certified by

.....

Medical Practitioner

.....

Reverse Side of Card.

Official.

In pursuance of Article 6 of the Law of June 1st, 1865 (*State Gazette*, No. 60).

To the Chief Inspector of Public Health for

at

From Medical Practitioner.

Transmission of Data.

Cases of infectious disease are to be notified *immediately*, notifications being forwarded to :

- (a) The Burgomaster ;
- (b) The Inspector of Public Health.

The Burgomaster also advises the Inspector of Public Health of all such notifications he receives.

A summary is published as a weekly annex to the *Nederlandsche Staatscourant*, and the Health Council at The Hague publishes a weekly bulletin indicating numbers of all such cases reported.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION RELATING TO MORBIDITY.

Official publications containing information relating to infectious and other diseases are summarised below:

Algemeen Overzicht van den loop der Bevolking.

All cases reported during the month of notifiable diseases, for each commune and province.

Opgave van het Aantal aangegeven gevallen, etc.

Notifiable diseases reported during the week. This appears in the *Nederlandsche Staatscourant* weekly.

Maandcijfers.

Cases of epidemic disease for each province each month.

Verslagen en Mededeelingen betreffende de Volksgezondheid.

A monthly publication issued by the President of the Health Council, assisted by the Director-General of Public Health, Head Inspector and Inspectors of Public Health, Director of the Central Laboratory of Public Health, etc., and containing a general description of the work of the Health Department, reports on infectious diseases, child hygiene, school-children, steps taken to combat disease, etc. The tabular statements appearing in this volume are :

- (a) Cases and deaths from typhoid 1912-1922 for the Kingdom.
- (b) Cases and deaths from typhoid in selected communes and the four principal communes.

(c) Total deaths in the Kingdom from typhoid arranged in the following groups :

- 0- 9 years.
- 10-19 years.
- 20-29 years.
- 30 and over.
- Age unknown.

(d) Cases and deaths in the Kingdom from scarlet fever yearly since 1912.

(e) The same for diphtheria.

(f) Cases of diphtheria arranged in age-groups :

- Yearly to 14 years.
- 15-19 years.
- Over 19 years.
- Age unknown.

(g) Actual deaths from :

- | | |
|-----------------|-----------------------------|
| Influenza, | Encephalitis lethargica, |
| Heart diseases, | Bronchitis, |
| Pneumonia, | Other respiratory diseases, |

given for each month of the year.

- (h) Cases in hospitals (not by diseases).
- (i) Patients admitted, discharged, died in hospitals in each province, and number of patients suffering from :
- | | |
|--------------------|----------------|
| Typhoid, | Scarlet fever, |
| Diphtheria, | Tuberculosis. |
| Venereal diseases, | |
- (k) Births for each province, indicating whether :
- | |
|------------------------|
| Attended by doctor, |
| Attended by midwife, |
| Without any attention, |
- for the Kingdom since 1909.
- Number of still-births.
- (l) Mortality rates for each province since 1910 for tuberculosis.
- (m) Cases notified in each province and commune of :
- | | |
|-------------|----------------|
| Typhoid, | Scarlet fever, |
| Diphtheria, | Dysentery, |
| Smallpox, | Meningitis. |
- (n) Deaths in each province and commune from :
- | | |
|-------------|----------------|
| Typhoid, | Scarlet fever, |
| Diphtheria, | Dysentery, |
| Smallpox, | Meningitis. |

OCCUPATIONAL MORTALITY.

Statistiek van Nederland, No. 247, van de Sterfte onder de Mannen van 18-65 jaar, met onderscheiding naar beroep, etc., in de jaren 1908-1911.

This important publication is the result of the enquiry of a Commission appointed to examine the figures, etc., of occupational mortality. In taking up this enquiry the Commission first divided the country into the following four groups :

- (a) Large towns,
- (b) Industrial centres,
- (c) Agricultural centres,
- (d) Remaining parts of the country,

The tables and figures appearing in the volume are the outcome of these investigations, grouped as above, and further subdivided into upwards of ninety professions, trades or callings.

Summarised results provide information on the following points :

Average deaths from cancer per 1,000 workmen.

- » diseases of the brain and spinal cord per 1,000 workmen.
- » tuberculosis.
- » acute and chronic diseases of the respiratory organs.
- » diseases of the heart.
- » diseases of the digestive organs.

Other summaries give occupational mortality rates, indicating :

- (a) Work performed in the open air.
- (b) Work performed in workshops.
- (c) Work whereby dust may be inhaled.
- (d) Work in high temperature.
- (e) Work performed among poisonous smells and gases.
- (f) Heavy manual labour.

Tabular information supplies :

Table 1. Tabular summary of deaths by causes according to occupation, 1908-1911, males born between 1844 and 1891.

Table 2. Comparative death-rates calculated from the figures contained in Table 1.

Table 3. Comparative occupational-mortality rates of males by causes of death, age, and per 1,000 males in the same calling.

Table 4. Mortality rates per year per 1,000 workmen for the following diseases

Cancer.

Diseases of the brain and spinal cord.

Tuberculosis.

Acute and chronic diseases of the respiratory system.

Diseases of the heart.

Diseases of the digestive organs.

11. VITAL STATISTICAL PUBLICATIONS OF MUNICIPALITIES.

THE CITY OF AMSTERDAM.

The publications of the Statistical Bureau of the City of Amsterdam having special
ence to vital statistics comprise the following :

1. *Statistisch Jaarboek der Gemeente Amsterdam.*
2. *Jaarcijfers.*
3. *Statistiek der Bevolking van Amsterdam.*
4. *Verslag van den Geneeskundigen Dienst te Amsterdam.*
5. *Maandbericht van het Bureau van Statistiek, Amsterdam.*

Statistisch Jaarboek.

This is the largest and most comprehensive of the statistical publications of
erдам, being published yearly, in two parts — the vital statistics being con-
d in Part I. Briefly described, the contents of Part I include the following
nation :

a) Meteorological observations regarding temperature, atmospheric pressures
humidity, direction and force of wind, rainfall.

b) The population of the city by age and sex groups ; the density of population
ifferent quarters of Amsterdam ; the population according to civil status groups ;
opulation by trade and profession groups and according to the following age
ys :

Under 16 years.	36-50 years.
16-22 years.	51-65 »
23-35 »	Over 65 »

c) Births, marriages and deaths, ample tabulated statements regarding each.
er *Births* will be found total births, numbers born living, and stillborn, births
nate and illegitimate (by sex groups). Comparisons of the former with five other
ities of the Netherlands are made. Multiple births, for each month throughout
ear. Births with indication of religion of the mother. In the section devoted to
cord of *Deaths* will be found total deaths for the year, and former years, according
and sex groups, and deaths for each month throughout the year. Totals are
iven by sex according to the following age groups.

Less than 1 year.	40-49 years.
1- 5 years.	50-64 »
5- 9 »	65-74 »
10-19 »	75-84 »
20-29 »	85 years and over.
30-39 »	Totals.

Causes of death are given according to both the short and detailed International Lists. These figures are given in total, and also by age and sex groups ; mortality rates are compared with those of five other large cities of the Netherlands. Professions and groups of trades or professions are dealt with, and the deaths by groups for certain special causes are indicated. Mortality rates calculated per 100,000 are given, and deaths of children under five years from certain special causes, though not according to sex groups.

Summaries of all births and deaths for earlier years are also given at the end of this section.

(d) The Municipal Medical Service. Particulars are given of the personnel of the service, the numbers devoted to each branch of the work ; hospitals, and cost of service ; the morbidity of infectious diseases, with special reference to the number of infected dwellings, numbers of people suffering from infectious diseases, numbers of disinfections carried out by the sanitary service ; numbers admitted to hospital suffering from infectious diseases, numbers treated, discharged, died, and death-rate per 100 treated — all given for individual hospitals of the city ; similar particulars are also given regarding cases other than infectious treated at the hospitals.

2. *Jaarcijfers.*

This booklet is a yearly publication, having made its first appearance in the year 1905 ; its purpose is to present the principal figures relating to Amsterdam, as soon as possible after the close of the year, so that those interested may be enabled to take them into consideration. The *Statistisch Jaarboek*, with its comprehensive details and elaborated tabulated statements, does not make its appearance until a much later date than does *Jaarcijfers*.

The information contained in this booklet comprises meteorological observations, births, marriages and deaths, according to age, sex and civil status ; causes of death, the short and detailed International Lists ; a summary of the activities of the municipal medical service, hospitals, and number of cases treated according to the nomenclature of the detailed International List ; cases of infectious disease for each month of the year. Briefly, this booklet is a summary of the *Jaarboek* which appears later in the year.

3. *Statistiek der Bevolking van Amsterdam.*

This booklet, which is published yearly, made its first appearance in 1899. It contains a summary of births, marriages and deaths, presented in various forms, together with some details regarding meteorological observations.

Births and deaths appear for each week throughout the year (births are noted by sex). Deaths appear by causes (International List), age, and sex ; deaths of children of less than one year, numbers of stillborns, deaths from special causes — the figures being compared with similar details relating to over 100 large cities in other parts of the world.

Verslag van den Geneeskundigen Dienst te Amsterdam.

This volume, published by the Municipal Medical Services, supplies the following information :

Cases and deaths in charitable institutions, with indication of causes of death.
Activities of the municipal clinics, *e.g.*, venereal and skin ; for women ; throat, and ear, etc.

Medical inspection of schools.

Tabular statements indicate :

Patients admitted to the three municipal hospitals for each month.

Patients treated in private hospitals.

Maandbericht van het Bureau van Statistiek, Amsterdam.

The monthly bulletin of the Statistical Bureau of Amsterdam, containing, in addition to other information, statistics of births, marriages and deaths for Amsterdam, stating :

(a) Population by sex for each month.

(b) Births according to sex and legitimacy with proportion of births per 1,000 inhabitants, numbers of live and still-births.

(c) Deaths according to sex, age and civil status and cause of death, Abridged National List. Proportion of deaths per 1,000 inhabitants.

(d) Numbers of cases of infectious diseases reported during the month, indicating numbers of persons occupying infected households, and numbers of cases admitted to hospitals.

ROTTERDAM.

Verslag van den Gemeentelijken Geneeskundigen Dienst te Rotterdam.

A comprehensive report containing general information regarding population, admissions to hospitals, and mortality rates. In greater detail, numbers of persons notified for admission to hospitals, tabulated by months, and the following information :

Epidemic diseases,	General diseases,
Nervous diseases,	Heart diseases,
Respiratory diseases,	Diseases of digestive organs,
Uro-genital diseases,	Diseases of pregnancy,
Skin »	Congenital weakness,
Children under one year,	Senility,
Accidents,	Other causes.

Numbers of cases and deaths from epidemic diseases.
Comparisons with other provinces and countries.
Venereal diseases.
Child welfare.
Stillborn children.
Numbers of patients in hospitals and deaths therein.

2. *Statistische Mededeelingen der Gemeente Rotterdam* (quarterly).

Published by the Municipal Statistical Bureau, and containing :

- (a) Population, births and deaths for each month of the year by sex.
- (b) Birth and death-rates for each month.
- (c) Deaths for each month, grouped as follows :

0-1 month.

1-5 years.

1 month-1 year.

Over 5 years.

(d) Cases of infectious disease reported for each month, with monthly figures for preceding year.

3. *Jaarcijfers, Rotterdam* (annual).

A statistical review of all public activities, published by the Municipal Statistical Bureau. Vital-statistical data comprising :

(a) Total population, total births and total deaths in Rotterdam annually since 1912.

(b) Birth- and death-rates for each year since 1912, and for each month of the year under review.

(c) Births, indicating legitimacy, annually since 1912. No distinction of sex.

(d) Deaths since 1912, indicating civil status but not sex.

(e) Total deaths since 1912, indicating cause of death according to the *Abstract of Mortality* International List.

(f) Total births and deaths for each month of the year under review, with indication of sex.

THE HAGUE.

1. *Verslag van den Gemeentelijken Geneeskundigen Dienst te 's Gravenhage.*

Numbers of cases treated by various municipal services.

Numbers of admissions to hospitals.

Cases of sickness among municipal employees.

Post-mortem examinations and reported causes of death.

Mortality rates of breast-fed children.

Venereal disease.

Verslag van het Centraal Bureau voor de Statistiek, The Hague.

Issued annually by the Director of the Central Bureau of Statistics, and containing account, submitted to the Minister of Home Affairs, of the activities of the Bureau, the titles and summarised contents of the various official publications issued during the preceding year.

UTRECHT.

Statistische Berichten, Gemeente Utrecht.

Quarterly bulletin published by the Municipal Statistical Bureau, and containing :

- (a) A summary of the movement of population.
- (b) Total population each month by sex.
- (c) Total births each month by sex.
- (d) Total deaths each month by sex.
- (e) Increase or decrease of population by sex.
- (f) Birth- and death-rates for each month.
- (g) Total deaths according to age, sex and the Abridged International List of Causes of Death.
- (h) Cases of infectious disease reported each month, indicating males, females, children under thirteen years, and whether the cases were treated at home or in hospital.

DORDRECHT.

Verslag over... van den Gemeentelijken Geneeskundigen Dienst te Dordrecht.

Issued by the Municipal Medical Service, and containing information regarding :

Sickness among municipal employees.

Actual cases for each month of :

Diphtheria,	Scarlet fever,
Tuberculosis,	Scabies,
Typhoid,	Cerebro-spinal meningitis.

Results of bacteriological examinations.

LEYDEN.

Jaarverslag betreffende den Gemeentelijken Geneeskundigen Dienst te Leyden.

A small annual report issued by the Municipal Medical Service, giving information regarding the population by sex, and the rates of mortality.

Deaths of infants under one year.

Deaths from fourteen causes of death.

Number of bacteriological examinations of specimens submitted by doctors.

Cases of sickness among school-children.

The campaign against tuberculosis.

Child hygiene.

MAESTRICHT.

Verslag van den Gemeentelijken Geneeskundigen Dienst te Maestricht.

This annual report of the Municipal Medical Service of Maestricht contains a general survey of the activities of that service and a report on the health of the population. The information of vital-statistical interest is as follows :

Cases of disease treated in municipal clinics, for each month.

Infectious diseases reported, *e.g.* :

Diphtheria,	Cerebro-spinal meningitis,
Typhus,	Scarlet fever,
	Scabies,

indicating numbers of positive and negative cases reported.

Tuberculosis — cases treated, number of patients sent to sanatoria. Deaths from tuberculosis.

Medical inspection of schools and school-children ; number of cases of sickness among pupils at different grades of schools.

Death-rates compared with other municipalities.

Deaths among breast-fed children.

Number of deaths according to the Abridged International List of Causes of Death.

Number of births in the municipal area.

ARNHEM.

Verslag van het Gemeentelijk Geneeskundig Schooltoezicht te Arnhem.

A report having special reference to schools and school sickness. The information covers :

Steps taken to combat epidemic diseases in schools.

Percentages of absentees through sickness.

Mortality rates among school-children.

Measles, scarlet fever, cerebro-spinal fever, typhoid fever among children.

ZAANDAM.

Verslag van de Verrichtingen van den Gemeentelijken Geneeskundigen Dienst te Zaandam.

A short report of the Municipal Medical Service containing data relating to :

Patients in hospitals, sex, numbers of deaths.

Cases admitted to hospitals, with indication of disease or ailment.

Number of deaths according to a list of twenty-nine causes.

Cases of disease or sickness among school-children, according to the different grades of schools attended by them.

12. CONCLUSION.

In the body of this handbook an attempt has been made to describe both the medico-statistical system and the scope of the official publications issued by the central and local authorities of the Netherlands. No explicit reference has been made to the nature of the contents themselves, since, apart from the fact that any such reference would disturb the course of the exposition, specific citations of rates of mortality and morbidity must, in the nature of things, rapidly become obsolete.

It is, however, felt that some indication ought to be given to help the student who is concerned rather with statistics as an instrument of medical research than as part of his administrative duties. Such a private student may desire to know what particular subjects of enquiry can be specially illuminated by a survey of the Netherlands experience.

It is proposed in the several tables to indicate some points which might be followed by a statistical student having access to the literature described above.

In the tables are set out the rates of mortality of the Netherlands and of England and Wales for the year 1913, chosen merely as a datum line. Any other year might have been chosen and any other Western European country might have been selected for comparison. The year 1913 and England and Wales were, in fact, selected merely because 1913 (the last pre-war year) is an epoch for which statistics are available in all countries and England and Wales has been selected because the publications of that country are readily available.

A mere glance at the tables shows very considerable discrepancies between the two systems and to comment upon all would involve a complete medico-epidemiological survey which would take us far beyond the limits of these remarks. Attention will be directed to two only of the possible objects of research — the mortality of pulmonary tuberculosis and the mortality and morbidity of certain zymotic diseases.

COMPARISON OF RATES OF MORTALITY (ALL CAUSES).

ENGLAND AND WALES AND THE NETHERLANDS 1913.

Death rates per 100,000.

		ENGLAND AND WALES.		THE NETHERLANDS.	
		Males.	Females.	Males.	Females.
1.	Enteric fever	5.084	3.137	4.566	3.0
2.	Typhus	0.016	—	—	—
3.	Malaria	0.280	0.047	0.164	0.3
4.	Smallpox	0.039	0.020	0.066	0.3
5.	Measles	31.181	26.633	20.238	18.3
6.	Scarlet fever	5.829	5.455	1.906	1.1
7.	Whooping cough	13.507	15.984	12.978	13.3
8.	Diphtheria and croup	12.185	12.165	6.867	7.9
9.	Influenza	18.832	15.905	6.472	10.8
10.	Asiatic cholera	—	—	—	—
11.	Cholera nostras	0.084	0.068	0.296	0.9
12.	Other epidemic diseases	2.872	2.276	2.300	2.8
13.	Pulmonary tuberculosis	120.316	84.644	102.934	110.4
14.	Tuberculosis meningitis	15.002	12.275	17.906	16.3
15.	Tuberculosis of other organs	22.097	18.140	18.826	17.3
16.	Cancer and other malignant tumours .	94.747	115.519	109.209	110.1
17.	Meningitis	12.493	10.601	18.102	13.8
18.	Cerebral hæmorrhage	63.997	71.800	57.167	74.3
19.	Organic diseases of the heart	130.727	137.353	76.880	95.4
20.	Acute bronchitis	109.273	103.422	41.463	37.4
21.	Chronic bronchitis				
22.	Pneumonia	67.788	40.215	66.925	51.0
23.	Other diseases of respiratory system .	75.225	60.632	91.302	75.4
24.	Diseases of stomach (not cancer)	15.864	14.785	6.571	4.0
25.	Diarrhœa and enteritis (less than two years)	66.382	49.778	87.952	66.3
26.	Appendicitis	7.772	5.990	3.450	2.3
27.	Hernia : Intestinal obstructions	11.020	10.916	6.440	7.3
28.	Cirrhosis of the liver	12.684	9.085	6.341	4.3
29.	Acute nephritis and Bright's disease .	46.754	36.695	36.666	41.1
30.	Non-cancerous tumours and other diseases of female genital organs	—	4.999	—	21.1
31.	Puerperal septicæmia	—	5.812	—	33.3
32.	Other accidents and diseases of pregnancy and childbirth	—	12.448	—	84.4
33.	Congenital weakness ; malformations, etc.	106.227	76.595	58.580	45.4
34.	Old age	74.262	92.516	82.387	104.7
35.	Violent deaths (not suicide)	62.328	25.788	44.288	11.6
36.	Suicide	14.543	4.815	10.809	27.7
37.	Other diseases	237.318	184.010	172.910	156.6
38.	Diseases unknown or ill-defined	8.786	6.295	93.209	79.9
Totals		1,465.463	1,276.277	1,266.150	1,201.4
Total deaths		261.687	243.258	395.38	373.3
Population		17,857.014	19,062.325	3,043.705	3,100.0

Pulmonary Tuberculosis.

As in all civilised countries, this is one of the principal causes of mortality in the Netherlands, more than 11 per cent of all deaths in 1913, and 8.5 per cent of deaths in 1921 being attributed to this cause.

The course of mortality has differed substantially from that of England and Wales. In England and Wales, the mortality of women from this cause (age standardised) exceeded that of males until 1870, since when the decline of female mortality has been much more rapid than that of males. The rate for females was only 70 % of the rate for males in the decennium 1901-1910.

England and Wales.

MORTALITY RATES PER 100,000 LIVING (ALL AGES).

	Males.	Females.		Males.	Females.
1901.....	148.8	105.5	1908.....	131.8	94.1
1902.....	145.7	102.6	1909.....	128.0	91.3
1903.....	143.0	99.5	1910.....	118.6	85.5
1904.....	146.2	103.4	1911.....	123.3	90.1
1905.....	135.2	95.3	1912.....	119.4	85.2
1906.....	136.4	96.4	1913.....	115.4	81.8
1907.....	134.9	95.9	1921.....	100.2	77.7

During the war, there was some increase of the rate for females, but the pre-war position has been re-established.

In the Netherlands, however, prior to 1904, male mortality exceeded female mortality, the ratio in 1901 being 100 to 98. An examination of the figures presented will show that, in 1905, female mortality for the first time exceeded that of males, the ratio then being 100 to 102, and this excess of female over male mortality has been maintained at a steadily increasing rate ever since, attaining a ratio of 100 to 109 in 1913, and a ratio of 100 to 119 in 1921, despite the fact that there has been a steady diminution of absolute mortality from this cause among both sexes during the years under review.

The Netherlands.

MORTALITY RATES PER 100,000 LIVING (ALL AGES).

	Males.	Females.		Males.	Females.
1901.....	140	135	1908.....	118	121
1902.....	137	128	1909.....	119	126
1903.....	134	131	1910.....	114	121
1904.....	131	138	1911.....	116	117
1905.....	135	136	1912.....	107	114
1906.....	133	136	1913.....	103	110
1907.....	126	133	1921.....	87	103

The foregoing rates, when compared with those for England and Wales for the same years, show that the Dutch experience of mortality among males is more favourable, but the rate of mortality among females in the Netherlands exceeds the rate of mortality among females in England and Wales. In Sweden, where also, in comparison with England and Wales, female mortality from pulmonary tuberculosis greatly exceeds male mortality at ages 5 to 50 years (1915), the unfavourable position has been attributed to the industrialisation of the population, particularly the introduction of women into factories.

Again, although the age groups used in official publications are not exactly coincident in England and Wales and the Netherlands, their respective distributions are such as to enable approximately accurate comparisons to be made. The figures presented above indicate some remarkable differences in the course of this disease in the two countries.

In England and Wales, the mortality among males is in some age groups double that of female mortality. In the Netherlands, on the other hand, male mortality exceeds female mortality only in the three late age groups, 50 to 60 years and over, and then to nothing like the extent found in England and Wales, while the experience of this country in the matter of female mortality has consistently been much more favourable than that of the Netherlands.

Further, the essentially recent change in the Dutch experience suggests the importance of some novel factor and the desirability of a special enquiry into this matter. It does not appear that the published official statistics suffice to clear up the cause of the difference.

Pulmonary Tuberculosis.

MORTALITY RATES PER 100,000 LIVING.

The Netherlands.

Age 20-29.		Age 30-39.		Age 40-49.	
Males.	Females.	Males.	Females.	Males.	Females.
.....		213.9	199.4		
.....		215.7	191.2		
235.1	214.4	176.3	206.3	193.4	162.1
225.0	202.2	182.6	191.1	174.6	164.4
238.6	204.7	179.1	209.8	183.6	170.5
220.4	216.3	169.6	211.8	185.8	178.1
212.0	209.3	164.9	192.7	169.9	175.2
198.2	187.8	146.6	183.4	154.1	154.1
203.0	201.4	151.8	197.0	168.7	163.9
187.2	195.3	143.0	178.8	161.7	149.7
175.2	177.9	139.2	179.0	146.1	152.2
162.8	176.8	132.8	161.7	136.6	138.3
161.1	165.6	136.5	162.1	132.9	139.7

Age 50-64.		Age 65-79.		Age 80 and over.	
Males.	Females.	Males.	Females.	Males.	Females.
..... 211.7	170.7	139.5	113.4	45.0	28.8
..... 208.4	147.2	163.0	117.7	56.5	37.6
..... 204.7	148.5	147.6	110.2	55.2	32.2
..... 204.7	140.6	157.0	112.0	66.0	54.1
..... 211.0	160.1	156.6	144.1	47.0	17.6
..... 201.0	147.3	151.2	121.5	63.1	34.6
..... 217.6	148.5	155.2	135.3	33.7	67.8
..... 201.5	150.6	166.6	123.2	38.5	29.1
..... 196.1	145.3	156.6	129.4	75.6	49.0
..... 182.1	121.3	158.3	134.3	47.6	56.0
..... 210.1	130.0	162.6	139.1	57.1	51.1
..... 184.0	133.4	157.6	122.8	66.2	30.9
..... 160.4	128.6	158.4	107.6	50.0	34.1

Pulmonary Tuberculosis.

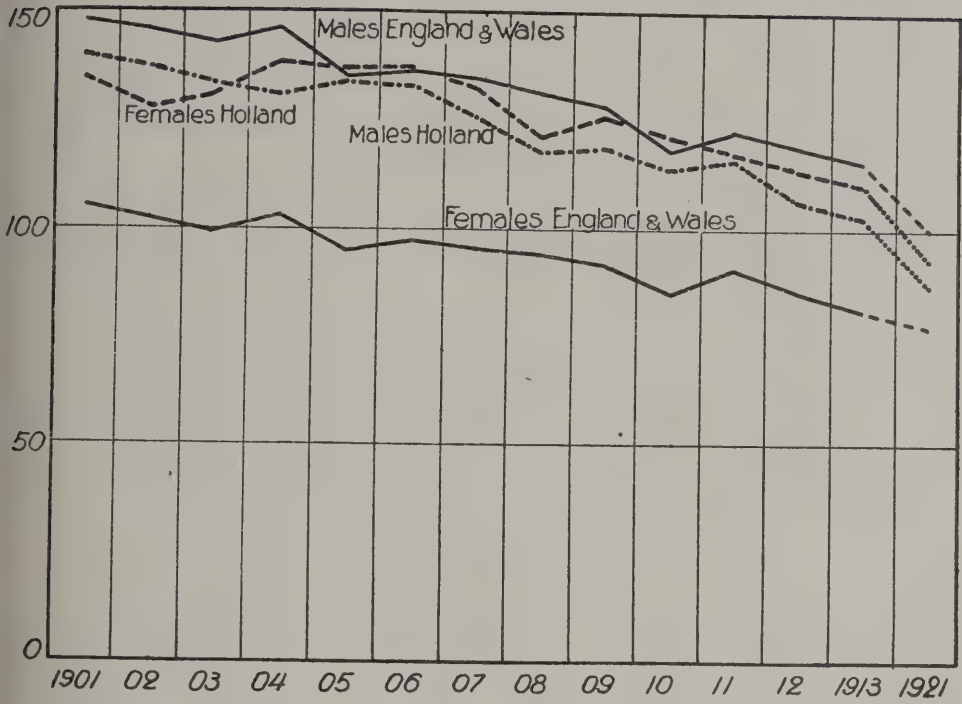
MORTALITY RATES PER 100,000 LIVING.

England and Wales.

	Age 25-34.		Age 35-44.		Age 45-54.	
	Males.	Females.	Males.	Females.	Males.	Females.
1901.....	215.4		289.2		313.8	
1902.....	214.1	154.8	257.8	178.9	307.3	147.2
1903.....	209.0	151.4	264.7	173.4	304.8	140.0
1904.....	212.6	157.9	270.1	170.0	310.1	148.4
1905.....	199.2	143.0	244.9	159.3	285.1	133.5
1906.....	195.6	145.9	256.3	163.0	291.9	135.3
1907.....	195.4	146.2	251.1	157.3	281.3	134.0
1908.....	191.8	145.9	244.2	149.8	268.1	134.5
1909.....	185.9	142.3	236.7	143.0	267.1	127.2
1910.....	168.7	130.7	217.3	140.4	245.4	118.2
1911.....	174.2	135.7	214.0	138.4	230.4	111.8
1912.....	169.0	128.5	210.1	130.2	229.2	108.8
1913.....	160.0	122.1	205.8	123.8	226.6	105.7

	Age 55-64.		Age 65 and over.	
	Males.	Females.	Males.	Females.
1901.....	252.2		131.7	
1902.....	243.7	116.6	130.2	66.8
1903.....	259.8	105.9	133.9	65.0
1904.....	255.3	117.2	125.6	65.3
1905.....	242.0	104.9	130.0	70.8
1906.....	237.6	100.3	133.0	62.4
1907.....	254.5	109.0	135.3	69.6
1908.....	251.1	102.4	133.8	67.4
1909.....	239.4	102.5	138.6	69.8
1910.....	226.0	102.2	134.0	68.5
1911.....	217.4	95.5	119.0	59.3
1912.....	221.3	90.8	111.4	57.7
1913.....	202.6	86.3	108.3	52.4

Pulmonary Tuberculosis.



Principal Zymotic Diseases.

In view of the very great importance of these diseases from the standpoint of public health administration, it has been thought well briefly to allude to the experience of the Netherlands as recorded in the official publications described above. In respect of measles, diphtheria (with croup) and scarlet fever, the experience of the Netherlands has been similar to that of the nearest Western neighbouring State, England and Wales, in that in both there has been of recent years a low prevalence of fatal scarlet fever, but, low as is the prevailing rate in England and Wales, the experience of the Netherlands has been still more favourable and the continued decline of mortality from this cause in England and Wales during the last twenty years has not yet reduced it to the level reached in the Netherlands.

In neither country are the results in the case of diphtheria and croup so favourable, but the position in the Netherlands is appreciably better than in England and Wales. Reference to the older statistics (summarised in *Statistiek van de Sterfte over het jaar 1920*) and comparison with the English data show that prior to 1880 the death-rate in the Netherlands was often higher than in England and Wales (in the quinquennium 1870-74 considerably higher). This condition still persisted until as recently as 1893, but, since 1894, the rate of mortality in the Netherlands has been much less than in England and Wales, being in 1920 and 1921 approximately only 50 % of the English rate. In view of the high degree of the urbanisation of the two countries, it would appear that a minute comparison of their experiences would be a useful starting-point for a medico-statistical study of diphtheria and croup from the international standpoint.

It also appears that the recent mortality experience of the Netherlands in respect of measles has been favourable, but the periodicity of this disease as an epidemic and possible difficulties of comparison from the statistical point of view, perhaps render it less suitable for international comparisons. It should be remembered that measles is not a notifiable disease in the Netherlands; in England and Wales notification depends on local decisions.

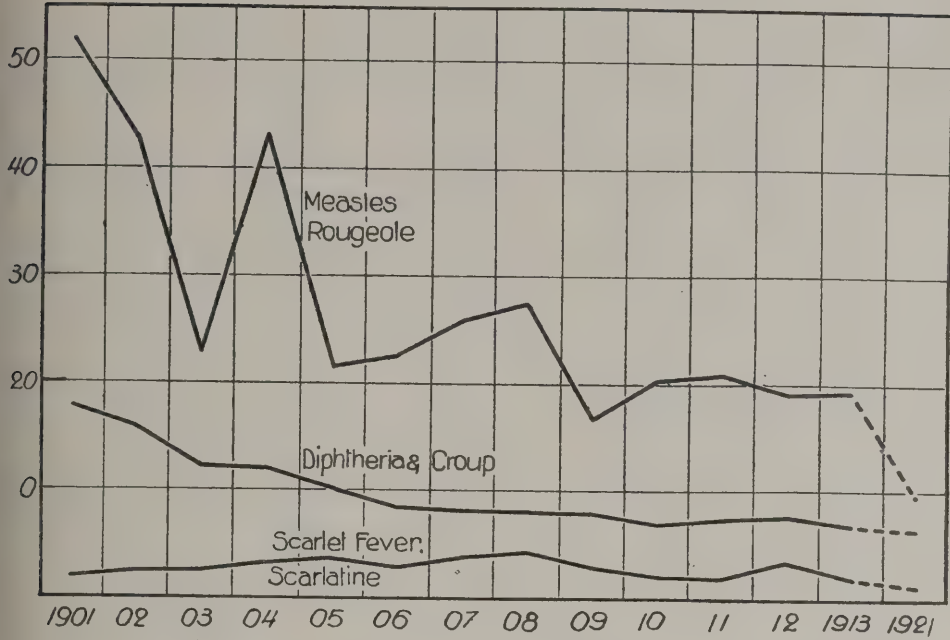
The sources of information regarding the *incidence* of scarlet fever and diphtheria have been indicated in the body of this handbook. It will be readily understood that the comparison of rates of incidence in different countries is a most hazardous undertaking. This caution is particularly necessary with respect to diphtheria, because the adoption of a bacteriological instead of a clinical criterion may greatly change the recorded incidence of the disease.

The death-rates per 100,000 of the population for the years 1901 to 1913 and for the year 1921 are as follows :

Principal Zymotic Diseases.

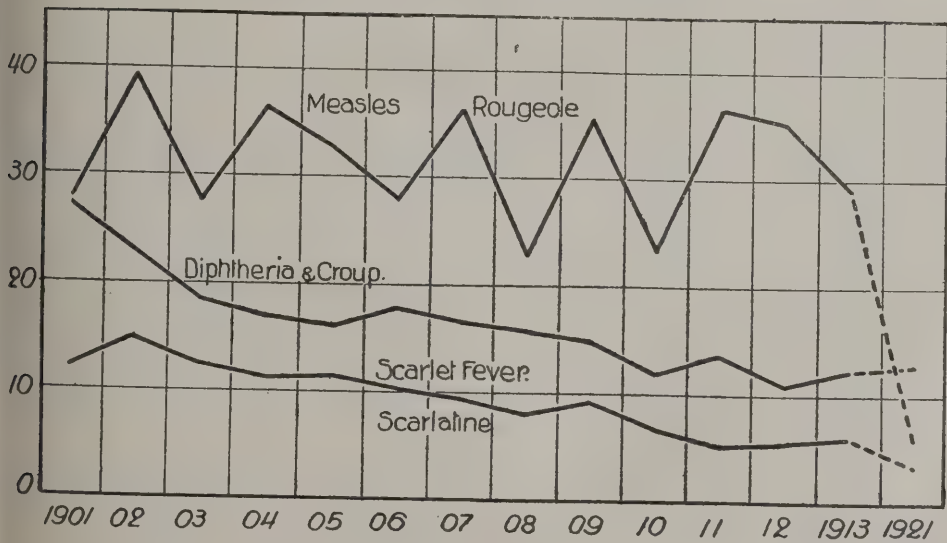
THE NETHERLANDS.

Mortality Rates per 100,000 Living.



ENGLAND AND WALES.

Mortality Rates per 100,000 Living.



MORTALITY RATES PER 100,000 LIVING.

The Netherlands.

	Measles.	Diphtheria and Croup.		Scarlet Fever.
1901.....	52.6	12.1	5.8	1.9
1902.....	45.8	10.2	5.6	2.5
1903.....	22.7	9.0	3.7	2.5
1904.....	42.8	8.8	3.2	3.2
1905.....	21.4	8.0	2.1	3.5
1906.....	24.9	6.4	2.0	2.8
1907.....	25.9	6.2	2.0	4.7
1908.....	27.2	6.3	1.8	5.2
1909.....	16.6	5.8	2.0	3.0
1910.....	20.0	5.5	1.4	2.0
1911.....	20.8	6.4	1.0	1.9
1912.....	19.2	6.6	1.0	3.3
1913.....	19.4	6.2	0.7	1.7
1921.....	9.6	6.3		0.9

England and Wales.

	Measles.	Diphtheria and Croup.		Scarlet Fever.
1901.....	27.7	27.3		13.3
1902.....	39.2	23.7		14.8
1903.....	27.5	18.3		12.5
1904.....	36.5	17.0		11.2
1905.....	32.6	16.1		11.3
1906.....	27.5	17.8		10.1
1907.....	36.4	16.5		9.3
1908.....	22.8	15.8		8.0
1909.....	35.6	14.8		9.1
1910.....	23.2	12.0		6.6
1911.....	36.3	13.5		5.2
1912.....	35.1	11.7		5.4
1913.....	29.1	12.1		5.7
1921.....	5.9	12.6		3.4

The Netherlands.

NUMBER OF NOTIFIED CASES AND DEATHS AND MORTALITY RATES PER CENT OF NOTIFIED CASES.

Scarlet Fever.			Diphtheria and Croup.		
Morbidity.	Mortality.	%	Morbidity.	Mortality.	%
..... 1747	101	5.78	4306	634	14.72
..... 1977	135	6.83	3798	541	14.24
..... 2154	134	6.22	3583	484	13.51
..... 4315	176	4.08	3738	480	12.84
..... 6006	193	3.21	3535	445	12.59
..... 5922	155	2.62	3628	357	9.84
..... 5336	269	5.04	3726	354	9.50
..... 5055	302	5.97	3343	365	10.92
..... 4327	178	4.11	3597	341	9.48
..... 3816	115	3.01	3269	324	9.91
..... 5340	113	2.12	4462	382	8.56
..... 8153	201	2.47	5136	399	7.77
..... 6517	108	1.66	5437	382	7.03
..... 4045	60	1.48	7575	379	5.00

No figures are available for measles.

England and Wales.

NUMBER OF NOTIFIED CASES AND MORTALITY RATES PER CENT OF NOTIFIED CASES.

Infectious Disease.		Cases notified per 10,000 population.	Deaths per cent of notified cases.
Scarlet fever	1911	Ages 0-15.... 94	1.8
	1912	» 96	1.9
	1913	» 115	1.6
	1921	All ages 36	.9
Diphtheria	1911	Ages 0-15.... 43	10.5
	1912	» 40	9.7
	1913	» 45	8.8
	1921	All ages. 18	7.2

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Census results, population, age, sex, civil status, nationality, etc.

Jaarcijfers voor het Koninkrijk van Nederlanden.

Annual report, population, births, marriages, deaths, etc.

Statistiek van den loop der Bevolking van Nederland.

Movement of population, births, marriages, deaths.

Statistiek van de Sterfte naar den Leeftijd, etc.

Mortality statistics, age, sex, and causes.

Statistiek van de Sterfte onder de Mannen, 1908-1911.

Deaths among males, occupations, ages, causes.

Statistiek der Huwelijken, der Geboorten en der Sterfte, etc.

Summary of births, marriages, deaths.

Maandschrift van het Centraal Bureau der Statistiek.

Monthly bulletin of statistics, births, etc.

Overzicht der Huwelijken, der Geboorten en der Sterfte.

Summary of births, marriages and deaths.

Verslag van het Centraal Bureau voor Statistiek.

Report to Minister of Home Affairs.

PUBLISHED BY THE NETHERLANDS DEPARTMENT OF PUBLIC HEALTH

Verslagen en Mededeelingen betreffende de Volksgezondheid.

Report of activities of Health Department, etc.

Jaarsverslag van het Staatstoezicht op de Volksgezondheid.

Annual report of Department of Health.

Centraal Gezondheidsraad Geneeskundig Staats-toezicht.

Report of work of Health Department.

PUBLISHED BY L'OFFICE PERMANENT DE L'INSTITUT INTERNATIONAL DE STATISTIQUE

Annuaire internationale de Statistique, Vols. I and II ; Appendix to Vols.

ISHED BY THE MUNICIPAL STATISTICAL BUREAU, AMSTERDAM.

Statistisch Jaarboek der Gemeente Amsterdam.

Vital statistics for the year.

Samenvatting der cijfers.

A summary of the *Jaarboek*, which appears later.

Statistiek der Bevolking van Amsterdam.

Births, marriages, deaths, movement of population.

ISHED BY THE MUNICIPAL STATISTICAL BUREAU, ROTTERDAM.

Maandbericht van het Bureau van Statistiek.

A monthly bulletin : births, marriages, deaths, infectious diseases.

Statistische Mededeelingen der Gemeente Rotterdam.

A quarterly publication : births, deaths, infectious diseases.

Samenvatting der cijfers.

An annual statistical review : population, births, deaths, etc.

ISHED BY THE MUNICIPAL STATISTICAL BUREAU, UTRECHT.

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A quarterly bulletin : population, births, deaths.

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Annual report of Medical Service.

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LEAGUE OF NATIONS
HEALTH ORGANISATION.

STATISTICAL HANDBOOKS SERIES : No. 2

THE OFFICIAL VITAL STATISTICS
OF THE
KINGDOM OF BELGIUM

GENEVA 1924

PREFATORY NOTE

The Health Section of the Secretariat of the League of Nations presents herewith the second volume of a series of handbooks on the vital statistics of various countries which deals with the Kingdom of Belgium. In so doing it wishes to express its gratitude and thanks for the generous help given by the Belgian officials and others to whom much consultation and correspondence was necessary by the authors in the text.

This handbook was prepared, on the invitation of the Health Section, by Dr. Major Greenwood and Major P. Granville Edge, of London, England, who are at present preparing also similar texts on several other countries. The Section appreciates the interest and care with which the authors performed their work and wishes to thank them most cordially.

Health Section of the Secretariat
of the League of Nations.

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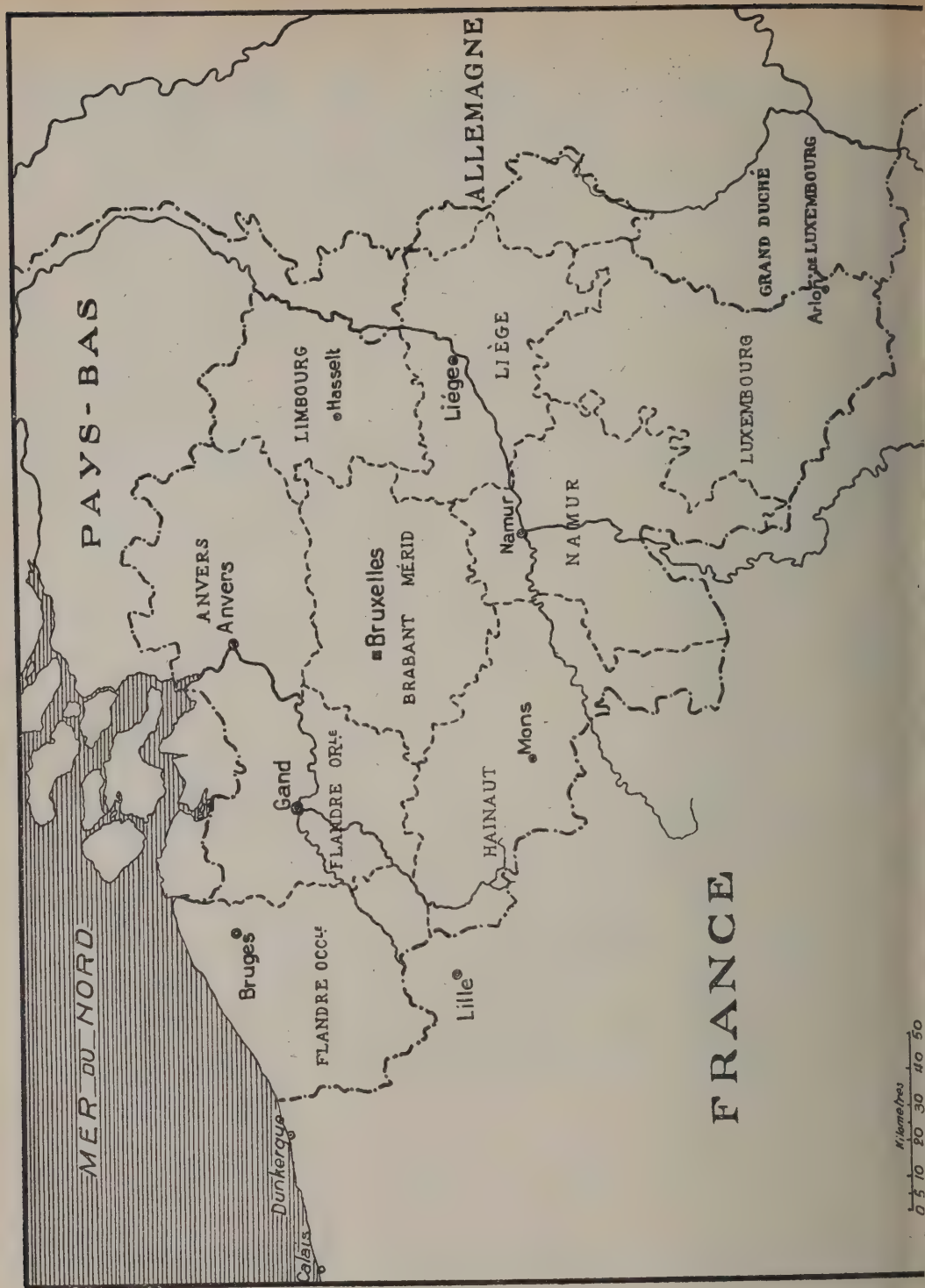
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OFFICIAL VITAL STATISTICS OF THE KINGDOM OF BELGIUM

I. INTRODUCTION.

The need for a ready and reliable source of detailed and descriptive information on the official vital statistics of the various countries has long been keenly felt by statisticians and public health officers. The difficulties which are at once encountered in data from two or more countries are assembled for comparative purposes are familiar to all. When the Health Committee of the League of Nations decided to collect and publish currently data on the prevalence of the chief communicable diseases, important questions arose concerning the comparability of the data. Consequently, in organising its programme of statistical work, it was planned as a special activity to prepare a series of handbooks describing the official vital statistics of the various countries.

Therefore it is the purpose of these volumes to present a review of the existing practice and procedures in the collection and publication of statistics on population, marriages, deaths and notifiable diseases, including not only methods of registration but also the current published reports. Effort has been made to include especially those facts, knowledge of which is important when comparisons are made of statistics from two or more countries. The statistics themselves are discussed chiefly with regard to the form and contents of the official reports in which they are presented. It is realised that, even when meticulous care is exercised in preparing such books as these, errors may not be entirely avoided, and the ultimate utility of the work can be judged best only by actual experience. Nevertheless, it is confidently expected that they will prove useful and valuable as reference books on the details of methods and procedure in the various national offices which collect and publish vital statistics.



FRANCE

Kilomètres
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2. THE KINGDOM OF BELGIUM.

GENERAL INFORMATION.

ea.

30,441 square kilometres.

population.

The population of the Kingdom was as follows:

According to Census results 1920	7,405,569
According to Population Registers 1921	7,482,133

Government.

The Kingdom of Belgium is an independent constitutional monarchy. The King is charged with the executive power, which he delegates to a Cabinet of Ministers representing a majority of the Chamber of Representatives. The political system of the country is principally based on three Acts, namely:

1. The Constitution of 1831, which established the legislative power exercised by the King, the Senate, the Chamber of Representatives, the judiciary and the executive power assigned to the King;
- 2 and 3. The Provincial and Communal Laws of 1831, which accord the administration of local interests to autonomous, provincial and communal administrations, and require their general observation of the national laws of the country.

Administrative Divisions.

The Kingdom is divided into 9 provinces, 41 arrondissements and 2,638 communes.

1. Each provincial administration has at its head a Governor, nominated by the King, a Provincial Council, half of which is renewed by election every four years, and a "permanent deputation" (Standing Committee) of six members, which is the organ of the central administration. The Governor, who presides over the Council, represents the central power in the province.
2. The arrondissements are groups of communes under the authority of a Commissioner and mark the limit of jurisdiction of each tribunal area.
3. Lastly, we have the commune, which is the administrative unit possessing self-government in all local matters, and comprises the Burgomaster, who is the nominee of the King, the elected Council and the "College" of the Communal Council, composed of a number of men presided over by the burgomaster. This "College" is the organ of the central administration.

PUBLIC HEALTH ADMINISTRATION.

Legislation. — Belgium has no codified general public health law. The administration of public health is controlled by many laws of different dates: broadly speaking, these laws fall into three main groups:

- (a) Those which give the National Government, provinces or communes power to issue regulations within defined limits;
- (b) Those which specifically enumerate what rules and regulations are to be observed;
- (c) Those which partake of the nature of both (a) and (b) above.

The above, in conjunction with certain international conventions, complete the Belgian Code; in the following pages reference will be made wherever necessary to particular Laws and Decrees relating to public health.

Central Health Administration. — The central public health administration is a part of the functions of the Ministry of the Interior and of Hygiene.

This Ministry has two divisions concerned most directly with public health, namely:

The Administration of Public Health.
The Central Statistical Department.

As will be pointed out later, these two divisions are entirely separate, the Central Statistical Department being concerned not only with vital statistics, but also with all other national statistics. Various technical services and advisory bodies on public health and statistics exist.

Provincial Health Administration. — Seventeen Provincial Medical Commissions, from one to three in each province, exercise a supervision over medical practitioners, midwives and dentists, are responsible for seeing that effect is given to existing laws and regulations relating to public health and advise the Ministry of the Interior on such matters.

A comparatively recent development has been the creation of provincial inspectors of hygiene, who have wide executive responsibilities and duties, and report directly to the Central Health Administration in the Ministry of the Interior.

The above services are Governmental under control of the Central Health Administration.

District Health Administration. — Certain technical, laboratory, and disinfectant services are provided by provincial authorities.

While certain communes combine for public services such as water distribution and hospitals, and some industrial hygiene work is done by district organisations, there is no district arrondissemental public health administration.

Communal (Local) Health Administration. — Local medical commissions, similar to the provincial medical commissions in their activities, exist in all communes having at least three doctors or two doctors and a pharmacist. Hygiene services are established in some of the towns and larger communes.

3. ESTABLISHMENT AND RESPONSIBILITY FOR STATISTICS.

Historical.

Following the year in which Belgium secured her independence (1830), the new Government in 1831 organised a general statistical bureau in the Department of the Ministry of the Interior, this bureau being designed to undertake the collection, compilation and publication of all vital statistical data. Between the years 1832 and 1841 several important statistical publications relating to population, mortality, etc., were issued.

In March 1841, by a Royal Decree, a Statistical Central Commission was organised within the Ministry of the Interior, in order to regulate and extend the statistical publications of the different ministerial departments.

The Decree further stipulated that "Our Ministry of the Interior is responsible for the execution of this Decree."

So the Administrative responsibility has remained and continues to the present day, with the exception that, under the authority of a Royal Decree dated September 16th, 1921, the Ministry of the Interior was newly designated the Ministry of the Interior and Hygiene.

A brief account of the general administration of vital statistics and statistics of notifiable diseases in Belgium is given in the following pages before proceeding to describe the statistical procedure in detail.

General.

Official statistics relating to public health in Belgium may be classified into three general groups, according to the nature of the data as well as the procedure involved in their collection and tabulation, as follows:

1. Statistics of population, births, deaths and causes of death.
2. Statistics of cases of infectious diseases notifiable by law.

The statistics included under the first heading are the product of what may be termed the general statistical system of Belgium. This system has for its foundation local machinery for collecting the original data in the communes, and for its superstructure the Central Statistical Department of the Ministry of the Interior and Hygiene. The statistics of notifiable diseases are dealt with in a totally different manner. They are based primarily on reports of practising physicians to the provincial

health administrations and, through the latter, to the Central Health Administration which, although a department of the same Ministry, has no close connection with the Central Statistical Department..

COLLECTION AND TABULATION OF DATA.

The system of collection and tabulation of the data relating to population (exclusive of the decennial census), births, marriages and deaths in Belgium is a *decentralised* one. In every commune there are maintained registers of:

Population,
Births,
Still-births,
Marriages,
Deaths, and
Causes of Death.

The basic tabulations from these registers are made in the communes upon a series of table forms devised by the Central Statistical Commission, and are returned to the Central Statistical Department. The *original data* contained in the current population registers, and in the records of births, deaths and causes of death are *not transmitted* to any provincial or central authority. The Central Statistical Department, therefore, is limited in its analyses to the data for the communes as summarised in these tables, the latter being on a uniform plan throughout for the entire Kingdom. In the great majority of communes, this work of summarisation is carried out by the local Registrar, only a few towns employing a special statistical bureau of their own. The tables of births, deaths and the general movement of the population are rendered yearly unless otherwise stated.

These returns, certified by the Burgomaster, are forwarded through the Commissioner of the arrondissement, who also certifies their accuracy, and transmits them through the Governors of the Provinces to the Central Statistical Bureau.

The information contained in these returns is briefly as follows:

- Table I.* Data required in making an estimate of the population (considered only those habitually resident in the commune). This information is gathered from the register of population, and from those of births, deaths and marriages.
- Table II.* Numbers of persons joining from abroad, or leaving the commune, registered by sex, country of origin or destination, and occupation.
- Table III.* The general returns on the above subjects and changes in the marital status, numbers of marriages and divorces, and the persons affected.

by sex and age groups; births, legitimate or otherwise, by sex; deaths, by sex; still-births and those dying before registration (from special register) and legitimisation of natural children.

- Table IV. The monthly numbers of marriages, births, deaths, still-births and those dying before registration, with distinction of sex.
- Table V. All deaths by age and sex, and in the case of deaths of children up to five years, indication of legitimacy.
- Table VI. Deaths due to violence, with indication of nature of violence.
- Table VII. Suicides, by sex, age groups and occupation groups. In two supplementary tables, deaths are grouped by sex and causes, according to the abridged International List of Causes of Death 1920; once in every five years this table is filled up in greater detail, deaths by causes and by age groups are then tabulated, and every ten years tabulation by sex is also published.
- Table VIII. (quinquennially): gives returns by age groups of married persons.
- Table IX. (quinquennially): special statistics of plural births and twins.
- Table X. (decennially): returns of married people by civil status.
- Table XI. (decennially): deaths by age groups and civil status.

The data described are forwarded through the official channels of communication to the Central Statistical Department, which first of all checks, and corrects if necessary, the figures contained therein, summarises the various data into series of tables for the whole country, and prepares final compilations for publication. The annual results of the movement of population so determined are published in the "*Moniteur Belge*", the details in the "*Bulletin Trimestriel*," and the "*Annuaire Statistique*."

Every ten years a somewhat detailed collective survey is given in the "*Bulletin de la Commission centrale de Statistique*." In addition M. Jacquart, the Director-General of the Central Statistical Department, has published two volumes commenting on and illustrating the results for the decades 1890 to 1900 and 1901 to 1910. A complete list of statistical results available in these publications is given under proper headings in the following pages.

4. POPULATION.

SOURCES OF INFORMATION REGARDING THE POPULATION.

Statistics of population in Belgium are available from three sources:

1. A decennial census made on December 31st of years ending in "0".
2. A register of the population in each commune.
3. A register of the civil status of the population.

THE CENSUS.

Historical.

The first census was made under a Royal Decree in 1830, the year in which Belgium became an independent nation. In 1846 a second census was provided for by an Order in Council. In 1856 a law was passed renewing this Order and providing for a decennial census throughout the Kingdom. The same law also enacted that population registers should be corrected and completed after each census. On May 25th, 1880, the date of the next census was fixed for December 31st, 1890, in order that the Belgian census date might correspond more closely with those in other countries.

Administration.

The Central Statistical Commission is responsible for the planning of the census of population as well as of agriculture, etc., and the Central Statistical Department in the Ministry of the Interior and Hygiene tabulates and presents the results. The actual enumeration, however, is carried out by agents appointed in each commune by the Governor of the province, one agent being provided for approximately every 1,000 persons.

Procedure.

These officials commence their duties by distributing census schedules between December 20th and 25th, three forms being used, namely:

- (a) *The Household Form* on which is written information regarding every person comprised in the household ordinarily resident in the household, whether present or not at the time of the census.
- (b) *The Special Personal Form* for the names of persons not ordinarily residing in the household but present during the census.

- (c) *The Special Collective Form* which was instituted in 1890, and is applicable to individuals segregated in boarding schools, barracks, institutions, etc.

The above forms are illustrated in Appendices 6 to 9.

The household and special forms have to be completed by the head of the household (or other person responsible), the information contained therein referring to conditions existing at midnight on December 31st.

Following the census, local agents resume their house-to-house visits for the collection of completed schedules, and the verification of the accuracy of their contents. Their duties also comprise:

- (a) The completion of a special return of the number of households;
- (b) The completion of individual cards for each person of the household;
- (c) The calculation of the number of inhabitants (checked by individual cards) and entry of these results on special forms provided for the purpose.

These completed results are then entered by the communal authorities upon general recapitulative forms, which, when completed, are forwarded, together with the individual cards, to the Ministry of the Interior, Central Statistical Department, which verifies, tabulates and prepares the results for purposes of publication.

THE REGISTERS OF POPULATION.

Under the law of June 2nd, 1856, every commune must maintain a register of the population within its boundaries.

Entered in Registers.

For each person "habitually resident":

Name and christian names.

Place and date of birth.

Civil status.

Legal domicile.

Trade.

Profession.

Official appointment or status.

Nationality.

Particulars of previous residence, subsequent residence and removal from the register and, when necessary, subsidiary and principal residence.

Addresses of houses successively occupied within the commune.

For each house:

A list of heads of households who have successively occupied the house.

The Burgomaster, as registrar of births, deaths and marriages, is responsible for maintaining the registers, but should he be unable to discharge this duty, the Communal Council may, at his request, appoint a deputy to act as registrar.

Transmission of data to the Central Statistical Department.

In February each year summaries, compiled by the communal authorities in the forms prescribed by the Central Statistical Commission, are forwarded through the Provincial Commissioners and provincial Governors to the Commissioners of Arrondissements, who, after verification of the totals, transmit them to the Central Statistical Department. The two forms used in summarising and transmitting the population data are Tables I and II. (Appendices 1 and 2.)

INTERCENSAL ESTIMATES OF POPULATION.

The data tabulated from the returns from communal registers and set forth in the first tables of the series referred to (pages 12 and 13) are used in estimating the number of persons habitually resident in the various administrative divisions and in the country as a whole. The results of the most recent census are taken as the basis for the calculations, the number of births, admissions to the registers, and of immigrations, and the number of deaths, deletions from the registers, and emigrations, being employed to estimate the number of resident persons.

For example, the population on December 31st, 1922, is obtained by adding to the officially recorded population on December 31st, 1921, the difference between arrivals and removals when the figures for the former exceed the latter or by subtracting from the officially recorded population on December 31st, 1921, the difference between arrivals and removals when the latter exceed the former. By reference to Appendices 1 and 2, it is seen that admissions are understood to mean (scheduled) births (excluding still-births and live-births in cases where the child died before the birth was registered) and entries in the registers of population in respect of persons coming from another commune of the Kingdom or from abroad. Removals are understood to mean (scheduled) deaths (excluding still-births and live-births in cases where the child died before the birth was registered) and deletions from the registers of population of persons who have removed to another commune of the Kingdom or have gone abroad.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION
REGARDING THE POPULATION.

From the sources described in the foregoing pages, the information regarding population is presented in a series of publications. The contents of these publications are outlined below.

Results of the Census (Report of the Census).

Only the preliminary report of the 1920 census has so far been issued, and on the assumption that the final report will follow closely the form adopted in the 1910 census results, the following description has been based upon the latter.

The 1910 Census report was issued in five volumes, the contents being:

1. General description of methods and principles adopted for the census; laws, decrees, ministerial documents, etc. relative thereto, and a general analysis of the results of the census giving the following information:

(a) Population by sex of the nine provinces.

(b) Population by sex of the administrative arrondissements.

2. Distribution of population according to place of birth, nationality, civil status, degree of instruction, age and sex, as follows:

(a) For each province and commune by sex, indicating:

Persons habitually resident in the commune.

Persons resident in another commune.

Foreigners.

(b) For administrative arrondissements by sex and the following grouped communes in each administrative arrondissement:

Communes having 5,000 inhabitants and over.

„ „ 2-5,000 „

„ „ less than 2,000 inhabitants.

(c) Total population of each province and for the following grouped communes:

Communes having 20,000 inhabitants and over.

„ „ 5-20,000 „

„ „ 2-5,000 „

„ „ less than 2,000 inhabitants.

- (d) Population of each province and commune, according to place of birth, nationality, civil status and sex indicating:

Persons born in Belgium.

Persons of Belgian nationality but foreign-born.

Foreigners born in Belgium or abroad.

the civil status indicating whether:

Single

Married

Divorced

Widows or widowers.

- (e) A summary of (d) above, for groups of communes in different arrondissements, namely, communes having:

5,000 inhabitants and over.

2-5,000 „

Less than 2,000 inhabitants.

- (f) A summary of (d) above, for each province and for communes having:

20,000 inhabitants and over.

5-20,000 „

2- 5,000 „

Less than 2,000 inhabitants.

- (g) Population of each province, arrondissement and commune, indicating sex and degree of instruction, the age groups being:

0-15 years.

15-21 „

21-55 „

Over 55 „

- (h) Summary of (g) above, for groups of communes in each province, namely, communes having:

5,000 inhabitants and over.

2-5,000 „

Less than 2,000 inhabitants.

- (i) Summary of (g) above, for each province, indicating sex and age for groups of communes having:

20,000 inhabitants and over.

5-20,000 „

2- 5,000 „

Less than 2,000 inhabitants.

3. (a) Population according to languages spoken for each province, administrative arrondissement and commune, indicating total population by sex and whether speaking:

French only	French and German
Flemish only	Flemish and German
German only	The three languages
French and Flemish	None of the three languages.

- (b) A summary of the above for each province and arrondissement and for communes having:

100,000 inhabitants and over.	
20-100,000	„
5-20,000	„
2-5,000	„
Less than 2,000 inhabitants.	

Numbers of foreign-born inhabitants by province, arrondissement and commune, indicating country of origin and sex, that is to say whether born in:

Germany
France
British Isles
Grand-Duchy of Luxemburg
The Netherlands
Austria-Hungary
United States
Italy
Switzerland
Russia
Other countries.

- (d) Numbers of persons of foreign nationality in each province, arrondissement and commune by sex, indicating whether belonging to:

Germany
France
British Isles
Grand-Duchy of Luxemburg
The Netherlands
Austria-Hungary
United States
Italy
Switzerland
Russia
Other countries.

- (e) Population according to civil status, year of birth and age, sex, degree of instruction, for each province and for grouped communes of:

100,000 inhabitants and over,

5,000 ,,

Less than 5,000 inhabitants,

and for communes of 10,000 inhabitants and more.

Groups of communes having 5,000 inhabitants and more.

„ „ „ ,, less than 5,000 inhabitants.

4. (a) Married population for each province, arrondissement and groups of communes having:

5,000 inhabitants and over,

2-5,000 ,,

Less than 2,000 inhabitants,

indicating duration of marriage, numbers of living children issued from marriage.

- (b) Summary of the above for groups of communes of:

20,000 inhabitants and over

5-20,000 ,,

2-5,000 ,,

Less than 2,000 inhabitants.

- (c) Population according to profession, indicating sex, profession and position in profession or calling, the occupational groups being:

Agriculture and forestry

Fishing

Industry

Commerce

Liberal professions

State employees

Domestic service

Occupation unknown or insufficiently described.

5. (a) Population of each province and administrative arrondissement by sex and professions, indicating whether principal or employee.

- (b) Population by professions of foreigners in Belgium by sex, and indicating whether:

French

German

English

Dutch

Other nationalities.

Movement de la population en Belgique.

This publication is issued by the Director-General of the Statistical Bureau. Two volumes (1876-1900, 1901-1910) have been examined.

In addition to a general summary of the movement of the population during the years envisaged by the particular volumes, tabular presentations are included with commentaries on the various phases of movement of the population.

The following information is available:

- (a) Total population by sex for each year.
- (b) Population of each province and administrative arrondissement.
- (c) Immigration and emigration for each province.
- (d) Distribution of population according to country of nationality for each province, indicating country of nationality, *i.e.*

Germany	Luxemburg
Austria-Hungary	The Netherlands
France	Other countries
Great Britain and Ireland	

and the same by sex for the Kingdom.

- (e) Total population for each year since 1880.
- (f) Absolute figures of the augmentation of population at decennial intervals with proportional increases per cent.
- (g) Population of each province at decennial intervals, with increase per cent. in each province.
- (h) Population of each province and administrative arrondissement at decennial intervals with increase per cent. in each.
- (i) Population according to the following groups of communes. Communes having:

100,000 inhabitants and over	
25—100,000	„
5— 10,000	„
2— 5,000	„
Less than 2,000	„

- (k) Composition of the population according to sex and civil status, indicating:
 - Single
 - Married
 - Widows or widowers
 - Divorced.

Population in the following age groups:

Less than 15 years
 15—55 „
 55 years and over.

- (l) A tabular presentation of the population of aged persons by sex, in the groups:

70—75 years
 75—80 „
 80—85 „
 85—90 „
 and yearly to 100 years.

- (m) Another summary of the population by sex and the following age groups, each of the administrative arrondissements:

Less than 15 years
 15—25 „
 25—40 „
 40—55 „
 55—65 „
 65—75 „
 75 and over.

Annuaire Statistique de la Belgique.

This is an annual publication issued by the Central Statistical Bureau under authority of the Minister of the Interior and Hygiene.

The information regarding the population appearing in this volume is as follows:

- (a) Population of each province and administrative arrondissement by sex each year.

- (b) Population by sex of each of the four principal communes, *i. e.*

Antwerp
 Brussels
 Ghent
 Liège.

- (c) Population of communes having:

100,000 inhabitants and over	
50,000 and less than 100,000	
25,000 „ „ „	50,000
20,000 „ „ „	25,000
15,000 „ „ „	20,000
10,000 „ „ „	15,000
5,000 „ „ „	10,000

the above-mentioned facts are recorded for provinces and individual communes in the provinces.

- (d) Total population of the Kingdom in the years 1830, 1840, and thereafter quinquennially until 1876. After 1876, annually.
- (e) Immigration and emigration for each province.

Annuaire Trimestriel.

A quarterly publication of the Central Statistical Bureau under authority of the Ministry of the Interior and Hygiene containing at intervals information as follows:

Immigration and emigration for each province. Live- and still-births with indication of legitimacy and sex.

Movement of the population, indicating "arrivals" and "departures" for each province and administrative arrondissement.

Annuaire Officiel du Royaume de Belgique.

An annual publication of the Ministry of the Interior and Hygiene (Central Statistical Bureau) providing the total population figures for the Kingdom, each province, arrondissement and commune, but without indication of sex, age, etc.

5. REGISTRATION OF BIRTHS.

Registration of births has been compulsory since 1805, the Burgomaster of each commune or his deputy being responsible for registers of births in the same way for registers of population, marriages, and deaths.

THE REGISTRATION OF LIVE-BIRTHS.

Registration is required within three days. The responsibility for declaration is imposed primarily upon the father of the child; in his absence or default, and in the case of an illegitimate birth, upon the physician, midwife or other person assisting at birth. The procedure varies in different localities. Most simply, the father, taking with him a "certificat de constatation" from the physician or midwife, accompanied by two witnesses, goes to the mairie (to the Bureau of the "Officier de l'Etat Civil"), where he makes the declaration, and gives all the necessary information enabling the registrar to draw up the "Acte de naissance" — the official record of the birth — in the "Livre de naissance". This book, like all others of the registers, is maintained in duplicate, the copies being filed yearly in the communal archives and in the local court.

In the larger towns, and in those Communes which maintain a service of verification of births and deaths, the procedure is somewhat more complicated. The father notifies the Mairie within 24 hours after birth, and the official there sends a "mandat de visite" to the local "médecin de l'Etat Civil", at the same time supplying the father with blank "Déclaration de Naissance" forms for filling up particulars at home. The *médecin* visits the home to verify the fact of birth, the sex, etc., fills in the requisite details in his certificate and hands it sealed to the father. The latter, taking all his documents and witnesses with him, then goes to the "Bureau de Naissance" at the Mairie (within three days of the birth), where the "Acte" is drawn up and signed.

Data recorded.

The *acte de naissance* requires the following information to be recorded for a birth:

“ Acte de naissance ”

OF

A LEGITIMATE CHILD

DRAWN UP ON THE DECLARATION OF THE FATHER.

Code civil. Art. 56, 57. Nos. 371 et seq. 381 et seq. 388 et seq.

At a.m. (or p.m.) on the of the month of in the
r, before us, (surname and christian names)
gomaster, Officier de l'état civil, of the Commune of in the judicial
ondissement of in the Province of, appeared

.....	Surname and christian names.	}	Of the Father of the child
.....	Age.		
.....	Place of birth.		
.....	Profession.		
.....	Domicile.*		

represent a male (or female) child which he declares was born at a.m. (or p.m.)
he inst. at the abode of the declarant (If the child was born elsewhere, indicate
place or house at which the birth occurred) and his wife,

.....	Surname and christian names.	}	Of the Mother of the child
.....	Age.		
.....	Place of birth.		
.....	Profession.		
.....	Domicile.		

which child he has given the christian names of

This declaration (“ acte ”) drawn up immediately at in the Burgo-
ter's office, in the presence of

.....	Surname and christian names.	}	Of two Witnesses
.....	Age.		
.....	Profession.		
.....	Domicile.		

esses necessary to this deed, has been read over to the declarant and the witnesses, and
wards signed by them and by us.

* Indicate for towns and cities the name of the street and number of the house, and for districts the section or village.

THE REGISTRATION OF STILL-BIRTHS.

DEFINITION.

Officially, a "still-birth" is defined as the birth of a dead child after the 180th day of gestation, but according to established procedure, under "still-born" are included

- (a) Children born dead.
- (b) Children born alive, but dying before registration (*i. e.* within three days birth).

A circular issued by the Ministry of the Interior in 1880, which is still in force says

"The returns of still-births compiled from the registry of deaths must include not only children actually born dead, but also children who, although born alive, died on the first, the second, or even the third day after birth, but who must be regarded as still-born, since they were not returned as live-births to the Public Registrar, and consequently could not be entered in the register of births (see Appendix 10).

THE STILL-BIRTHS REGISTER.

All such births are recorded in a special "still-births" register only, and not in the ordinary births or deaths register.

The instructions of 1878 and 1879 which established the special still-births register, require the following information to be inscribed in that register for each still-birth (see Appendix 11).

For all "Still-births."

- (a) Date of declaration.

For children actually born dead.

- (a) Indication of legitimacy and sex.

For children born alive but dying before registration.

- (a) Indication of legitimacy and sex.
- (b) Whether dying on the 1st, 2nd, or 3rd day of life.

It will be noted from the foregoing that the communal registers contain sufficient information to enable a distinction to be made between still-births (in the strict sense, *i. e.* born dead after the 180th day of gestation) and children born alive but dying without birth registration during the three-days period allowed for the registration of their births.

The published birth statistics and the mortality statistics of Belgium, however, do not include still-births within the meaning of the term as defined by official practice. That is, they exclude not only children born dead, but also the births and deaths

infants who were born alive but who died within three days after birth without registration. The statistics of such still-births are given separately.

Local records of all still-births are forwarded to the Central Statistical Bureau in the manner described on page 12.

LOCAL TABULATION AND TRANSMISSION OF NATALITY DATA TO THE CENTRAL STATISTICAL DEPARTMENT.

In the series of Tables referred to (see pages 12 and 13 and Appendices 1 to 5) which are used for the local tabulation and transmission of communal totals to the Central Statistical Department, data concerning births are given in Tables III, and IX.

Table III (which is the General Summary of Population Data from the Civil Registers of the Communes) gives totals for births in the following details:

Births, exclusive of still-born children and of other children entered as still-born, with distinction as to sex, specifying also legitimacy.

Recognition of natural children in the birth certificate, and after issue of birth certificate, with distinction as to sex, legitimisation of natural children recognised before marriage, and recognised after marriage, with distinction as to sex.

Still-born children and other children entered as still-born under the following heads:

Children born dead, with distinction as to legitimacy and sex.

Children entered as still-born, but having lived

less than 24 hours

24 hours but less than two days

2 days „ „ „ three days

With distinction as to sex and legitimacy.

Table IV gives the monthly totals for births in the year for which the report is made, in the following detail:

Births (*i. e.* those entered as live-born, in the birth register) with distinction as to sex.

Still-born infants distinguishing between children born dead, and other children entered as still-born, with distinction as to sex.

Table IX gives additional details concerning deliveries of twins and of plural births, as follows:

For twin births:

The number of instances when

Both are live-born,

Both are still-born,

One is born alive and the other born dead.

In each of the above categories, sex of each child and legitimacy.

For plural births, for each such exceptional birth, the following particulars for each child:

Sex, legitimacy, still-born or live-birth, *e. g.* Delivery of triplets, whether legitimate, sex of each, whether born alive or still-born.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION REGARDING BIRTHS.

The official publications containing information regarding births in Belgium and their contents, are as follows:

Annuaire statistique de la Belgique.

- (a) Births for each of the nine provinces by sex, for each of the preceding years;
- (b) Births for each of the nine provinces and forty-one administrative arrondissements, totals only, sex not distinguished, but totals given for five preceding years;
- (c) Statement of excess of births over deaths, or deaths over births, totals only for the nine provinces and forty-one administrative arrondissements;
- (d) Total births, not arranged according to sex nor including still-births, for each of the years 1831-1920;
- (e) Still-births and children "presented dead", totals only for the years 1831-1920;
- (f) Total births by sex and legitimacy for each of the nine provinces;

(g) Proportions;

Boys per 100 girls,

Births per 100 inhabitants

„ „ 100 deaths,

Legitimate and illegitimate births,

„ births per total births,

„ „ „ 100 inhabitants,

Illegitimate births per 100 inhabitants,

Legitimate births per 100 married women,

Illegitimate births per 100 single women, widows and divorcees, ages between 15 and 45,

Legitimate male births per 100 legitimate female births,

Illegitimate male births per 100 illegitimate female births;

(h) Total births by sex, for each month of the year;

(i) Still-births and children “presented dead”, arranged according to legitimacy and sex, for the year, and for decennial periods, for each of the nine provinces. Still-births and children “presented dead”, by legitimacy and sex, for each month of the year. Twin births and multiple births, by sex and legitimacy. Total births according to legitimacy for the cities of Antwerp, Brussels, Ghent and Liège, and for grouped communes.

Mouvement de la population en Belgique.

(a) A survey of the general movement of births in the Kingdom, with tabular presentations to illustrate important variations or developments over a series of years;

(b) Fecundity of women from 1876 onwards, indicating number of births per 1000 married, and 1000 unmarried women, between the ages 15-55, for each of the nine provinces and forty-one administrative arrondissements;

(c) Illegitimate births for quinquennial and decennial periods for the nine provinces and forty-one administrative arrondissements together with illegitimate birth rates;

(d) Twin births and multiple births;

(e) Still-births and children “presented dead,” proportionate rate per 1,000 inhabitants, computed for quinquennial periods.

Bulletin trimestriel (Bureau de la statistique générale).

The September issue contains the following information:

(a) Live-births according to legitimacy, still-births according to legitimacy, infants “presented dead” according to legitimacy, and total births according to legitimacy.

All the above information given for each of the nine provinces.

- (b) Total births by sex, for decennial periods, 1861-1910, and yearly from the year 1913.

Annuaire sanitaire de la Belgique.

Births arranged for each province and group of communes: legitimate and illegitimate births, excess of births over deaths and proportion of male births to female births.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION REGARDING
STILL-BIRTHS.

Mouvement de la population en Belgique.

A section of these publications is devoted to a résumé and presentation of statistical data relating to still-births and children "presented dead." The tables indicate:

- (a) Absolute figures and percentage to births for each of the nine Provinces.
- (b) Also for arrondissements.

Bulletin trimestriel (Bureau de la statistique générale).

Presentation of these data are again only an occasional feature but, when given, the following information is tabulated:

Still-births and infants "presented dead" according to legitimacy, for each of the nine Provinces. Absolute figures.

Annuaire statistique de la Belgique.

- (a) Total still-births and children "presented dead" for each year since 1861.
- (b) Total still-births and children "presented dead" according to sex and legitimacy for each of the nine Provinces, for the year and quinquennially 1861-1910.
- (c) Still-births and children "presented dead" by sex and for each month of the year, for the year under review and decennially 1891-1910.
- (d) Twin and multiple still-births and "presented dead" by sex and legitimacy.

Annuaire sanitaire de la Belgique.

- (a) Still-births and infants "presented dead" by sex and for each month of the year.
- (b) Still-births and infants "presented dead" by sex and legitimacy for each province.
- (c) Totals for the Kingdom, proportions for all births.

6. THE REGISTRATION OF DEATHS.

GENERAL.

The registration of deaths has been compulsory in Belgium since March 1803, though the earliest records based upon the present system date from the year 1830.

No period of time is legally fixed for the declaration of a death, but this is usually made within 24 hours of the occurrence of a death.

REGISTRATION OF DEATHS WITHOUT RESPECT TO CAUSE.

On the occurrence of a death, the nearest relative, acting as declarant, and accompanied by a witness, informs the "Officier de l'état civil," who is the sole competent authority to inscribe the fact, to issue authorisation for burial, and to draw up the *Acte de Décès*. On receiving notice of a death, the registrar must proceed to the place where the deceased person is lying, and satisfy himself that death has actually occurred. Thereupon, the "Acte" is drawn up after examination of deceased's papers of citizenship (*e. g.* "Pièces de l'état civil", "Livret de famille," "Livret militaire," etc.) and when complete is signed by the declarants and the Burgomaster (deputy); the details contained in this document are indicated in the example reproduced on page 32.

In the larger communes, the registrar appoints a "Médecin de l'état civil" to certify and report upon cases of death on his behalf, this official waiting 24 hours after the occurrence of a death before examination of the nude body. In some places, the certificate of the attendant physician is accepted in lieu of the visit of the medical doctor. In hospitals the superintendent, and in the Army the Military Medical Officer, are responsible for supplying the necessary certificate of death.

“ACTE DE DÉCÈS”

Civil Code, Art. 78 and 79, Nos. 836 et seq.

At a.m. (or p.m.) on the of the month of in the
year, before us (surname and christian names) Burgomas
Officier de l'état civil, of the Commune of in the judicial arrondissement
..... in the Province of, appeared
..... Surname and christian names
..... Age.
..... Profession.
..... Domicile.

} of each of the
two declarants

(Indicating for each of them whether father, uncle, nephew, cousin, etc. of the deceased)
who have declared before us that at ¹ a.m. (or p.m.) on the
of the month of in the year there died
..... Surname and christian names.
..... Age.
..... Profession.
..... Domicile.

} of the
deceased.

(If married, say husband or wife of giving name, age, profession of other contracting
party, or widower or widow of etc.)

..... son (or daughter) of (adding names, ages, professions and domiciles of
father and mother of deceased); if either parent is dead, add who died the at

² This *Acte*, drawn up immediately after the declaration was made at in the
Burgomaster's office, has been read over to the declarants, and afterwards signed by them
by us.

¹ When the day and hour of death are not known, as for example, in the case of a person
found dead, say “Found dead” in place of the word “died”.

² If the declarants cannot supply all the information required, add the words “with
further information.”

The "*actes*" are kept in the "Bureau de l'état civil" of communes and attached are preserved in duplicate registers. If a death does not take place in the commune in which the deceased was domiciled, the particulars given in the "Acte de Décès" must be transcribed in the register of the commune in which he had his domicile. Once a year the records are examined and classified by the communal administration. It is important to note that, though the registration of *deaths* is compulsory, certification of *cause of death* is not obligatory. Since there exists some difference of procedure in recording deaths and causes, as well as in the transmission of data to the central authority, each method will be described separately below.

THE CERTIFICATION OF CAUSES OF DEATH.

As has already been stated, since there exists no *legal* provision for medical certification of death, the certification of the *cause* of death is not obligatory in law. Medical practitioners — and in their absence, all other persons having knowledge of the cause of death of deceased persons — are *urged* to give this information.

In 1866 the Minister of the Interior issued a circular especially inviting medical practitioners to certify the *cause* of death in the cases of deceased persons whose illness they had attended, or in those cases of death at which they had been present by accident, etc. Since the instructions then issued still remain in force, the circular referred to is reproduced below :

Circular No. 123

GENERAL STATISTICAL RETURNS.

Causes of Death.

BRUSSELS, September 10th, 1866.

Sir,

The compilation of statistics on the causes of death dates, in Belgium, from the cholera epidemic, the figures for each commune, together with summaries, classified according to province, month, age, sex, and condition as to marriage, being given in the volume on the movement of population for the year in question.

After taking this initial step, the administrative authorities endeavoured to find a method of recording on uniform lines all other diseases which were regarded as liable to cause death. In a Circular dated December 13th, 1850 (*Moniteur Belge*, December 17th, 1850, No. 351) my predecessor gave instructions that, as from January 1st of the following year, a table should be drawn up for each commune which, in addition to the surname and christian names, the age, civil condition, occupation of the deceased and date of death, would supply particulars of the disease or accident which caused death.

"The cause of death" so runs the penultimate paragraph in this circular, "shall be certified by the medical man who attended the deceased, or failing a medical man, by the relatives or friends of the deceased. In the latter case, the most widely known and most generally used method may be adopted in specifying the cause of death."

The work steadily pursued in recording the statistics of the causes of death and the improvements made from year to year in this branch of the public service are set out at the beginning of Chapter II of the statistical documents published annually by my Department. It was not until 1861 that the returns of deaths classified according to the various diseases were supplied by all the urban and rural communal administrations; for even in the previous year, three towns and 23 rural communes failed to make this return.

As the time has now come to substitute a standardised nomenclature of diseases for the often incomplete, vague, and even uncertain statements furnished, whether by doctors or by untrained persons, I have drawn up the following regulations which will come into force as from January 1st, 1867.

A form on the lines of the No. 1 specimen form annexed hereto¹ must, in every case of death, be filled up by a medical man or, failing a trained practitioner, by any of the other persons indicated in the above-mentioned Circular of December 13th, 1850.

It is intended that this form should not only specify the disease or accident which caused death, but also the period during which the deceased suffered from the disease or accident in question, and also any previous accidents and diseases from which he suffered or which may have been contributory causes of his death. The latter information is essential to enable the true cause to be distinguished from the other causes, which may be merely subsidiary or arise out of the real cause. The form is framed in such a way as to be suitable for all cases of death, no matter what may be the cause, and is intended to contribute effectively to the advancement of medical knowledge.

The Government accordingly considers that it can confidently count upon the intelligent and wholehearted support of practitioners in all districts in introducing and complying copiously with the instructions in the new specimen form, no matter whether these practitioners

¹ Not reproduced.

attended the deceased during his illness, or were present by accident at the moment of death, or were called in when the patient was *in extremis*.

The intelligent co-operation of the medical profession is essential if the real cause of death is to be distinguished from a cause which may often only be subsidiary or apparent or merely symptomatic. The majority of the notes appended to certain terms in the list of diseases to which I allude will refer later are also mainly intended for the medical profession. In short, the object in view is to encourage the employment in these statistical returns of purely scientific names which will describe accurately the various causes of the deaths which have to be registered.

The various communes should be recommended to preserve these forms for a period of at least five years among their official papers as being of great local interest and scientific value. Nothing, indeed, is better calculated to guide the administration aright in the choice of measures for public safety and health than returns of the causes which, during a certain period of time, give rise to a high death rate among the inhabitants of a commune. Moreover, by preserving these forms in the manner indicated above, great services may be rendered to medical theory and practice. The medical men in the country will consult them with advantage; those who wish to make a special study of any particularly frequent cause of death will find in these forms valuable information, and many other great centres of population will undoubtedly follow the example set by the administration of the City of Brussels, and will compile statistics of death more complete than the Government is in a position to supply for the whole country.

Annex No. 2 gives a new nomenclature of the causes of death which was prepared by a Special Committee of three doctors appointed at the meeting of the Central Statistical Commission on June 7th, 1865.

In this list of names, which is based for the most part on the discussion at the various meetings of the International Statistical Congress, the causes of death are classified in four great categories and arranged under 116 numbers.

The headings and sub-headings of each of the four categories on the one hand, and the details of each kind of accident and disease on the other, are sufficient to show the principle of classification which was adopted and also the nature of the causes of death. Nevertheless, certain names, used in specifying the causes of death, although very generally accepted, are altogether beyond criticism, further information has been supplied by means of figures and references to the standardised list of names.

After these explanatory notes, two vocabularies, one in French and the other in Flemish, give the names employed in the form adopted and also the very large number of names which are still in general use to describe the same kind of accident or disease in the various parts of the country. These vocabularies are intended specially for the guidance of the official or clerk specifying the causes of death returned by persons other than medical men. After the name employed in the return, the clerk will find the serial number in the official list of names which represents the scientific name of the disease to be entered.

The above observations cover the whole of the measures which I beg you to bring to the knowledge of the communal administrative authorities, and I suggest you should do this by forwarding the present Circular and its annexes in the Administrative Instructions.

Copies of these documents, specially printed by the *Moniteur Belge*, will also be supplied to you for distribution to the medical men in your province as soon as you inform me of the existing number of doctors. Moreover, blank forms of the No. 1 specimen form, which have to be filled in by doctors, will be supplied to the latter at the Government's expense by a printer appointed by my Department or by yourself in the province. I should like to know your views on this matter at a sufficiently early date to permit of the medical men being supplied with the necessary material before January 1st, 1867.

(Signed) ALPH. VANDENPEEREBOOM,
Minister of the Interior.

The procedure and practice of certification, especially as regards the diagnosis of the cause of death, is not uniform throughout the Kingdom — ordinarily, the form of certificate is as follows:

Province		FORM FOR DECLARATION OF CAUSES OF DEATH	
Commune		Name	
		died on at o'clock.	
		Street House No.	
Principal disease or accident (for entry in the register of causes of death).			
Disease or accident which preceded or accompanied (complication of) that already named.			
Cause and duration of the principal accident or disease.			
Occupation of the deceased			
Observations			
Date of this declaration:		Signature and status of declarant:	

In the larger towns, maintaining “ Médecins de l'état civil ”, these officials usually restrict their duties to verifying the *fact* of death, and only assign a cause when there has been no attendant physician before death. As a general rule, the attendant physician leaves a sealed note with the family, showing the cause of death, and this is required to be handed in when declaration of death is made, and before the “ Acte de Décès ” is drawn up. This certificate is sent on unopened, by the Registrar, to the local Bureau of Hygiene or of Statistics (if such exists) with a view to the consolidation of results for transmission to the Central Statistical Bureau. The example reproduced below illustrates the form of certificate in use in the city of Brussels:

CERTIFICAT.

VILLE DE BRUXELLES

DIRECTION

DE

L'HYGIÈNE PUBLIQUE

Statistique médicale des décès

CONFIDENTIEL.

Certificat médical de décès à l'usage exclusif de la statistique sanitaire

Je soussigné, docteur en médecine, etc., déclare avoir donné mes soins à..... nommé

n° , décédé..... des suites

Bruxelles, le 19.....

Le Médecin traitant,

N. B. — LES REGISTRES STATISTIQUES NE FONT PAS MENTION DE LA PERSONNALITÉ DES DÉCÉDÉS; LES CERTIFICATS MÉDICAUX DE DÉCÈS SONT BRÛLÉS AUSSITÔT LA CONSTATATION MÉDICALE OFFICIELLE DE DÉCÈS FAITE ET LE DÉPOUILLEMENT STATISTIQUE QUOTIDIEN TERMINÉ.

Avis du décès doit être donné sur-le-champ au bureau de l'état civil, en indiquant soigneusement la rue et le numéro, afin que le médecin vérificateur puisse se rendre à domicile pour constater le décès et remettre son procès-verbal aux personnes chargées de faire la déclaration.

Hors les cas prévus par les règlements de police, l'inhumation ne pourra avoir lieu que vingt-quatre heures après le décès et sur la production, au fossoyeur, du permis émanant de l'Officier de l'état civil.

Les bureaux de l'état civil sont ouverts au public: 1^{er} district: de neuf heures à deux heures de relevée; les samedis de neuf à douze heures et demie; les dimanches et fêtes, de neuf heures à deux heures de relevée; 2^e district: de neuf heures à deux heures de relevée; les samedis de neuf à douze heures et demie; les dimanches et fêtes de neuf heures et demie à onze heures pour les décès seulement.

It is necessary to point out that, in the smaller communes, where the desired information is obtained from the verbal statements of the declarant or other surviving members of the household of the deceased, such information must necessarily have considerably less value from the point of view of statistical accuracy.

In the light of the foregoing remarks, and bearing in mind the fact that the medical attendant does not always state the cause of death, it follows that the resulting statistical data must be imperfect. That this is recognised is clear from the following remarks of the Central Statistical Commission, which preface their published results in this subject:

“The statistics of the causes of death are drawn up in each commune by the communal administration from information supplied by the medical practitioner attending the deceased in his last illness, or the medical officer verifying the death, or, if no such information is available, in accordance with the particulars obtained from the members of the family of the deceased, or from persons in intimate relations with him. As no legal provision has been made for a system of medical verification of death, and as, in point of fact, such a system exists only in a number of the larger towns and communes, the particulars obtained on this subject do not possess the degree of accuracy which is desirable. The Central Statistical Commission, recognising the justice of the criticisms which have been passed in this connection, has considered it necessary in publishing the statistics of mortality to make the above observations and reservations.”

In so far as the “secret professionnel” is concerned, since, in the larger towns the physician's certificate is a sealed document, there is a considerable measure of secrecy, but this is not true of those communes where the open certificate of death and cause of death goes through the local *Bureau de l'état civil*.

Transmission of Data to the Central Statistical Bureau.

Under the existing system, the tabulation of original data is done in the communes by the communal authorities, upon prescribed forms, which are transmitted by the Burgomaster through the Governors of the Provinces to the Central Statistical Bureau, where further tabulations and analyses are made and prepared for publication. The tables used for these summaries in the communes are illustrated in Appendices 1 to 5.

Summaries of the causes of death are made by the communal authorities on the supplementary tables of the series referred to. The summaries are of three kinds: (1) annual, (2) quinquennial and (3) decennial.

1. *Annual summaries*, made in February, give the number of deaths by age grouped according to the abridged international list (38 groups exclusive of the

ths and "autres enfants présentés sans vie", in a supplementary table of the
ies referred to (p. 13), with the following summary grouping for totals, by sex:

- (a) Deaths due to lack of viability.
- (b) Deaths due to disease.
- (c) Deaths due to external causes.
- (d) Deaths through unknown diseases or insufficiently defined.

2. *Quinquennial summaries* for years ending in "5" and including only the one
year, show the number of deaths grouped in every detail as in the annual summary,
but with distinction as to sex for the following age groups:

Under 1 year (12 months)					
1 year	but	less	than	2 years	
2 years	"	"	"	5	"
5	"	"	"	7	"
7	"	"	"	15	"
15	"	"	"	21	"
21	"	"	"	50	"
50	"	or more.			

CLASSIFICATION.

The classification used is the Abridged International List of the Causes of Death
1900, which is made a part of the uniform summary schedules prescribed by the
central administration and used in each commune.

MORTALITY STATISTICS PUBLISHED BY THE CENTRAL STATISTICAL DEPARTMENT.

Based on the data described in the foregoing paragraphs, a series of publications
issued by the Ministry of Interior and Hygiene, Central Statistical Depart-
ment. Their contents, from the point of view of statistical detail, are as follows:

Annuaire statistique de la Belgique.

- (a) Total deaths for each province and administrative arrondissement.
- (b) Excess of births over deaths for each province and arrondissement.
- (c) Total deaths by sex for Antwerp, Brussels, Ghent and Liège.
- (d) Total deaths for the Kingdom for the following years: 1830-1840. Quinquen-
nially to 1876. Yearly since.
- (e) Total deaths by sex for each province.
- (f) Deaths by sex for each month of the year.

(g) Total deaths by age; the age distribution being as follows:

less than 5 days
5 to 10 days
10 „ 20 „
20 „ 30 „
1 „ 2 months
2 „ 3 „
3 „ 6 „
6 „ 12 „
and yearly to 100 years.

(h) Deaths according to age, sex and civil status, indicating for the years 1911 and 1920:

Single
Married
Widows
Widowers
Divorcees
Civil status unknown

and the following age groups:

less than 15 years
15 to 18 years
18 „ 21 „
21 „ 25 „
25 „ 30 „
30 „ 35 „

etc. to 100 years and age unknown.

(i) Total deaths according to age groups, mortality rates per cent., the age groups being:

less than 1 year
1 to 19 years
20 „ 39 „
40 „ 59 „
60 and over.

The above are for the years 1895, 1900, 1910 and 1913.

(k) Average deaths 1891 to 1900 by list of 24 causes; by sex.

(l) Deaths by causes according to Abridged International List of Causes of Death; totals by sex, and mortality rates per cause per 1,000 inhabitants. Similar tables for each province with no indication of sex.

(m) Deaths by causes and sex, according to the Abridged International Causes of Death, for the following age groups:

0 to 1 year
1 „ 2 years
2 „ 5 „
5 „ 7 „
7 „ 15 „
15 „ 21 „
21 „ 50 „
50 and over.

(n) Violent deaths indicating homicides, suicides, accidents, doubtful: by sex.

(o) Suicides by age and sex, the age groups being:

less than 16 years
16 to 25 years
25 „ 40 „
40 „ 50 „
50 „ 60 „
60 „ 70 „
70 and over
age unknown.

laire sanitaire de la Belgique.

(a) Total deaths by sex for each month of the year.

(b) Total deaths by sex for each province.

(c) Total deaths by age groups as follows:

less than 5 days
5 to 10 days
10 „ 20 „
20 „ 30 „
1 „ 2 months
2 „ 3 „
3 „ 6 „
6 „ 12 „
Yearly to 100 years.

- (d) Total deaths by causes from the Abridged International List for each province, arrondissement and commune of over 5,000 inhabitants.
- (e) Summary of causes of deaths according to the Abridged International List for each province and for grouped communes of more than 5,000 inhabitants and less than 5,000 inhabitants.
- (f) Total deaths by causes according to the Abridged International List by sex and by groups of communes, the groups of communes being:

20,000 to 100,000 inhabitants

5,000 to 20,000 „

Less than 5,000 „

The four principal communes grouped.

- (g) Deaths from tuberculosis for each province and arrondissement. For grouped communes see (f) above.
- (h) Deaths from cancerous affections for each province and arrondissement. For grouped communes see (f) above.
- (i) Total deaths in the principal hospitals in cities or communes.
- (k) Deaths in municipal hospitals in the nine provinces, indicating 23 causes of death.
- (l) Deaths in private hospitals by sex, according to 12 causes.
- (m) Deaths in prisons by sex and by causes.
- (n) Deaths in prisons by sex and age; the age groups being:

less than 16 years

16 to 20 years

21 „ 30 „

31 „ 40 „

41 „ 50 „

51 „ 60 „

Over 60 years.

Mouvement de la population en Belgique.

This publication contains a summary of the distribution of causes of death during the years under review, together with total deaths according to sex; total deaths according to sex and according to Abridged International List of Causes of Death.

- (a) Total deaths each year from 1880 for the Kingdom.

- (b) Mortality rates for each province quinquennially 1881 to 1910.
- (c) Classification of the administrative arrondissements by death rates per 10,000 living (sexes separate) and in the following age groups:

15 to 40 years
 40 „ 55 „
 55 „ 75 „
 75 and over.

- (d) Deaths by causes and sex.

Annuaire trimestriel.

This quarterly publication occasionally, though not as a regular feature, contains the following information:

Total deaths for each province and administrative arrondissement.
 Causes of death according to Abridged International List.
 Numbers of deaths, but no indication of sex.

OFFICIAL PUBLICATIONS CONTAINING INFORMATION
 REGARDING MORTALITY OF CHILDREN.

Annuaire statistique de la Belgique.

This annual volume supplies data of mortality as follows:

1. (a) For children of less than 1 year, with mortality rate per 100 births.

- (b) Deaths in the age groups:

1 year and less than	2 years
2 years „ „ „	3 „
3 „ „ „ „	4 „
4 „ „ „ „	5 „

- (c) Total deaths 1-5 years.

The above information is tabulated for each of the 9 provinces and 41 administrative arrondissements.

2. Total deaths of children according to the following age distribution:

0-5 days 5-10 days
 10-20 „ 20-30 „
 monthly to 6 months
 6-12 months
 yearly from 1 year.

(Still-births and infants "presented dead" not included.)

Mouvement de la population en Belgique (1876-1900 et 1901-1910).

A general résumé of the trend of infantile mortality for the years under review for each of the provinces and arrondissements, together with tabular illustrations.

Bulletin trimestriel (Bureau de la Statistique générale).

Occasional features of this publication are:

- (a) Still-births and infants "presented dead", distinguishing legitimate and illegitimate births for each of the nine provinces (absolute figures).
- (b) Deaths of children at ages less than 1 year and mortality per 1000 births for each of the nine provinces.
- (c) Deaths of children at ages less than 5 years. Absolute figures for each year of life, for each of the nine provinces.

Annuaire sanitaire de la Belgique.

Absolute figures and mortality rates of children are presented for each province.

7. INFORMATION REGARDING NOTIFIABLE DISEASES.

PROCEDURE.

The procedure of recording, summarising and publishing statistics of notifiable diseases in Belgium is so different from that followed in the registration of births and deaths that a brief statement contrasting the two procedures is pertinent.

1. *Cases of diseases* notified under the various laws relating to information on epidemics, reports of infectious diseases, etc., are reported by physicians (and other persons responsible) to Inspectors of Hygiene who are agents of the central health administration in the Ministry of the Interior. This is in contrast to the system of communal registers of population, births, deaths and marriages as the source of statistical data.
2. *Summaries* of reports of notifiable diseases are made every 10 days by the Inspectors of Hygiene to the central health administration direct, and not through the communal or arrondissement authorities, as in the case of births, deaths, etc.
3. The *tabulation* and *publication* of these summaries are made by the central health administration and not by the central statistical department as in the case of births, deaths, etc.

In short, statistics of disease prevalence are a part of the work of the central health administration and do not come under the general system of local registration of the central statistical administration.

Notification.—Under the authority of a Decree of 1885, medical practitioners were required to inform the communal authorities of outbreaks of contagious disease, but on April 12th, 1907, an improved system was introduced whereby medical practitioners were provided with printed notification forms which could be transmitted free of charge: a fee of 2 francs for each notification completed and despatched was payable to the practitioner. The Decree of July 15th, 1908, made midwives responsible for reporting to the Provincial Medical Commission all cases of puerperal pyæmia coming under their notice.

On February 13th, 1915, a Decree was issued which applied to the Unoccupied Territory, and which after the war was amended to include the whole Kingdom, making notification obligatory in all cases of enteric fever, typhus, smallpox, cholera, and dysentery. Failure to comply with the regulations rendered defaulters liable to fines of 20–100 francs or imprisonment of from 1–8 days. The compulsory notification of plague, cholera, smallpox, typhus, etc., are again referred to in the Decree of June 10th, 1922, while the Circular issued by the Ministry of the Interior and the Inspectors of Hygiene on June 15th, 1922 (Appendix 12), emphasises the importance of care and detail in submitting all notifications, which are made on a prescribed form, as follows:

Report Form.

.....
Commune Village.....

or

Street N^o

Date of onset of disease

Nature of disease

Age and profession of patient

If a child indicate { School.....
Class

Name of laboratory to which specimen was submitted for bacteriological examination

Cost of postage of specimen submitted

Date

Name and address of doctor (write legibly):
or stamp (seal) of doctor:

(Signature):

.....

.....

(Reverse side of Above.)

MINISTRY OF THE INTERIOR
ADMINISTRATION OF PUBLIC HEALTH
Service Letter-Card

Post-Free.

Doctor.....

Government Inspector of Hygiene for the Arrondissement of

.....

at at

In 1922 the fee to medical practitioners of 2 francs for each notification made by them was raised to 5 francs, and it is stated that this has led to appreciably better results.

DISEASES NOTIFIABLE.

At the present time (January 1924) the list of diseases notifiable in Belgium is as follows: * (The diseases for which notification is compulsory are in italics.)

All declared or suspected cases of

<i>Cholera.</i>	Dysentery.
<i>Plague.</i>	Diphtheria.
<i>Typhus.</i>	Cerebro-spinal meningitis.
<i>Relapsing fever.</i>	Scarlet fever.
<i>Smallpox.</i>	Encephalitis lethargica.
Typhoid fever.	Human Rabies.
Paratyphoid fever.	Puerperal septicæmia.

Notification of cases of plague, cholera, typhus, relapsing fever, and smallpox must be made by telegram, and for the declaration of the first case of these diseases a special fee of 20 francs is paid if the diagnosis is confirmed; notification of the remaining diseases in the above list is not compulsory, but the physician is to pay a special fee for each case notified within 24 hours.

Responsibility for Compulsory Notification. — Responsibility for notifying the Government Inspector of Hygiene of the occurrence of a case is laid upon :

- (a) The attendant physician, or, in his absence, the person attending the case.
- (b) The head of the household — who is required to notify the Burgomaster of the commune. In the absence of the head of the household, it is incumbent upon members of the family over the age of 18 years to make the declaration, or, in the absence of relations, upon the principal occupant of the household at whose house the case has occurred, or, in default of any of the above, upon any person having knowledge of the case. If the case occurs on board of a steamer, ship or barque, the declaration is incumbent upon the captain, or his deputy. It is expressly provided that the declaration shall be made to the Burgomaster within 12 hours after diagnosis of a case of notifiable disease.

Notifications sent by practising physicians, and received by Inspectors of Hygiene, are entered by the latter in a special register maintained for this purpose, of which is illustrated below;

* See also Appendix 12, page 75.

1. Date of entry 2. No. of order 3. Date of transmission to the Provincial Medical Commission	PATIENT		1. Nature of Disease 2. Date of onset 3. Result of bacteriological or serological examination (+ or -)	Physician notifying 1. Name 2. Address	OBSERVATIONS
	1. Commune 2. No. of Street or Village 3. School-Class.	1. Age 2. Profession			
1.	1.	1.	1.	1.	
2.	2.	2.	2.	2.	
3.	3.		3.		
1.	1.	1.	1.	1.	
2.	2.	2.	2.	2.	
3.	3.		3.		

HYGIENE INSPECTION

Place.....

Report of Transmissible Diseases declared from

to 19.....

DISTRICT	Cholera	Plague	Typhoid Fever	Para- typhoid Fever	Typhus Fever	Dysentery	Diphtheria and Croup	Cerebro- and spinal Meningitis	Rabies	Small- pox	Scarlet Fever	Puerperal Septi- cemia	Ence- phalitis Lethargica	Other Diseases	REMARKS	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

1. — The 10-day summaries will report all notifications received between the 1st and 10th day, 11th and 21st days and the 21st to the end of each month. These 10-day reports must be sent to the Central Administration not later than the day after the last day of the decade, namely, on the 11th, 21st and 1st of each month.

2. — Under Column 1 will be written in alphabetical order the names of the communes, and in addition the number of cases reported of the diseases mentioned at the head of the column. Suspected cases will be indicated by the sign S placed at the side of the figure.

3. — Columns 15 and 16 will be reserved for other epidemic diseases not already mentioned (Columns 2 to 14).

4. — Under Column 17 and at the foot of the table Inspectors will write their observations relating to the diseases notified; inspections made (I.F.); instructions given to the local authorities, intervention of Inspectors with the Doctor (M.); despatch of the District Nurse (M.S.); disinfection operations (Des.); isolation to hospital (I. Hop.); reports sent to the Central Administration (Rapp.).

5. — The space left free at the bottom of the page will be reserved for the mention of any general observations or references to preceding reports.

In addition to the summaries of these reports, the inspectors submit reports to the central administration whenever they have investigated any serious outbreak of epidemic diseases, or contagious infection liable to rapid extension, with follow-up reports on the results of laboratory investigations or of prophylactic measures taken, etc. In the event of an outbreak of smallpox, typhus or other serious or highly contagious infection, they are required to send in a daily statement to the central health administration; otherwise special reports are called for only when any unusual and interesting features present themselves in the course of normal routine. They are also required to make monthly reports of their activities, a summary report upon the sanitary conditions of their district, and comprehensive annual summaries, examples of which are reproduced in Appendix 13.

STATISTICS OF NOTIFIABLE DISEASES.

While the notifications contain some details which are of value in epidemiological studies, these details are not as a matter of routine utilised in the current summaries made in the Central Health Administration. The Central Health Administration limits its statistical treatment of the data to a summarisation every ten days of the reports of the provincial inspectors of hygiene which is issued as a sheet entitled "Relevé des cas de maladies transmissibles déclarés pendant la décade du 192...." This Bulletin contains the number of cases of each of the notifiable diseases reported in each province and for the Kingdom during the ten-days period specified. It is distributed to provincial and other health officers, to the foreign sanitary authorities in the frontier zones, and to others interested.

Quarterly summaries of the same kind, showing the totals for cases by month and by provinces, are published in the *Bulletin de l'Administration de l'Hygiène* issued quarterly by the Ministry of the Interior and Hygiene.

PUBLICATION OF STATISTICS OF NOTIFIABLE DISEASES AND OTHER CURRENT EPIDEMIOLOGICAL INFORMATION.

Bulletin de l'Administration de l'Hygiène.

An official publication of the Department of Public Health of the Ministry of the Interior and Hygiene, containing particulars of:

The Budget allotment.

The activities of the department.

Official circulars, etc., issued during the year regarding health matters.

Health laws, etc.

Transmissible diseases, cases reported during each month, for each province, of:

Typhoid fever.

Paratyphoid.

Diphtheria and croup.

Typhus.

Dysentery.

Cerebro-spinal meningitis.

Human Rabies.

Scarlet fever.

Encephalitis lethargica.

Smallpox.

Puerperal fever.

Other affections.

Cases of venereal disease treated at the expense of the State, with distinction of each month.

Résumé des cas de Maladies transmissibles déclarées pendant la décade.

An official publication of the Department of Public Health, issued every 10 days containing the number of cases of notifiable diseases by province and for the kingdom as a whole.

THE DEGREE OF ACCURACY OF THE STATISTICS AND THE FACTORS WHICH MAY INFLUENCE THEM.

(The following observations have been submitted by M. Camille Jacquart, Director-General of the Belgian Central Statistical Department, to the Service of Epidemiological Intelligence and Public Health Statistics.)

A number of observations may be made on this subject, the most important of which are the following:

1. As every possible precaution is taken to ensure that the registers of births, deaths and marriages are properly kept, and as heavy penalties are imposed for any failure to carry out instructions, these registers are as accurate as any document which is the work of human hands.

The registers of population, which are under the supervision of the commissioners of districts and in the correctness of which the communal administrations are directly interested, also reach a high standard of accuracy, although it falls short of that of the registers of births, deaths and marriages.

The entries in the registers of population can only be kept constantly up-to-date if the inhabitants regularly notify the authorities of changes of address. But this is a matter which is beyond the control of the officers responsible for keeping the registers, no matter how zealous or conscientious they may be: and as regards changes of address, they do occur in the registers and, consequently, in the annual statistics which are compiled from them. But by supplying up-to-date and complete particulars of addresses, the returns of the decennial census enable errors to be periodically corrected.

2. Apart from errors which may arise in the process of examining and classifying the material — errors which are reduced to a minimum in view of the fact that the returns are examined from different points of view and may be checked by different methods — the information extracted from the registers of population and the registers of births, deaths and marriages may be regarded as accurate.

The statistics of the causes of death are drawn up in each commune by the communal administration from information supplied by the medical practitioner attending the deceased in his last illness or the medical officer verifying the death, or, if no such information is available, in accordance with particulars obtained from the members of the family of the deceased, or from persons in intimate relations with him.

As no legal provision has been made for a system of medical verification of death and as, in point of fact, such a system exists only in a number of the large towns and communes, the particulars obtained on this subject naturally do not possess the degree of accuracy which is desirable.

The Central Statistical Commission, recognising the justice of the criticisms which have been passed in this connection has considered it necessary, in publishing the statistics of mortality, to make the above observations and reservations.

These statistics can, indeed, only be regarded as giving a general view of the facts, and they are incomplete in respect of humiliating diseases or diseases of a nature likely to bring discredit on the family of the deceased or to affect the matrimonial prospects of its members.

4. A fourth general observation may be made. Many communal administrations in the smaller districts do not command the services of officials competent to prepare statistical statements, and, even when such officials are available, they do not always possess the necessary inclination or aptitude for this class of work.

This remark should not be extended so as to apply to all officials. In every administrative grade there are zealous and conscientious employees as well as employees who are the reverse; but at the present time we are actually considering duties which fall outside the scope of administrative work and which call for a degree of interest and knowledge seldom found in communal administrations. The remedy for the present state of affairs is to be found in centralising the compilation of statistics, a solution which was proposed by the General Statistical Department but was prevented by the war and has not yet been carried out.

5. The following particulars may be given in connection with the foregoing observation:

Statistical offices are to be found in few districts only. In most of the communes the officials of the population offices or the offices where births, deaths and marriages are registered, are responsible for compiling the statistics of the census and of births, deaths and marriages.

The value of the work accordingly depends for the most part on the competence of the officials. The work of the General Statistical Department cannot begin until the figures contained in the tables have been checked.

Under a centralised system the duties of the communal administrations would be confined to the completion of separate forms for each birth, death, marriage, &c. *The original statistical document* is prepared at the same time as the record of birth, death or marriage to which it relates. It is forwarded to the Central Administration which can examine it, check it and classify it in various ways for the purpose of obtaining any information which it may think desirable.

As regards the causes of death, the system would not be complete unless the statistical document containing a record of a death was accompanied by a certificate given by a medical man.

8. VITAL STATISTICAL PUBLICATIONS OF MUNICIPALITIES.

Monthly Bulletin of the Department of Health, Brussels.

A leaflet publishing tabulated vital statistical data for the communal area of Brussels, subdivided as follows:

For the City.

- (a) Births indicating sex and legitimacy.
- (b) Total deaths by sex (residents and visitors).
- (c) Total deaths by sex (residents only).

- (a) For the whole communal area, total deaths by age and sex and legitimacy, the age group being:—

0 — 1 month. 1 — 2 years.
1 — 6 months. 2 — 5 years.
6 — 12 months. 5 — 10 years.

- (b) Deaths by causes for the territorial divisions of the city, and total population.

- (a) Principal causes of death for the year and four preceding years.

- (b) Number of cases of infectious diseases notified during the month under review, and numbers for the same month for the four preceding years.
Number of disinfections carried out during the month.

- (c) Comparative table, births, deaths, and rates calculated per 1,000 population for the month under review, and for the same month during the four preceding years.

Suburbs and Communes.

- I. (a) Births indicating sex and legitimacy.
- (b) Total deaths by sex (residents and visitors).
- (c) Total deaths by sex (residents only).

10 — 15 years.
15 — 20 years.
20 — 30 years.
30 — 40 years, etc. to 100 years.
100 years and over and age unknown.

- (b) Deaths by causes for each territorial division, with population of each.

- (a) Principal causes of death for the year and four preceding years.

- (c) Comparative table, births, deaths, and rates calculated per 1,000 population, for the month under review, and for the same month during the four preceding years.

in mensuel de Statistique: Ville d'Anvers.

The only copies of this monthly summary which have been available have been published prior to the outbreak of the Great European War. Those examined

contained the following information of vital statistical interest, in addition to other matter:

Movement of population.

Monthly totals of population with distinction as to sex.
 " " of Births and Deaths with distinction as to sex.
 " " of Increase or Decrease of population with distinction as to sex.
 " " of population in prisons, in boats, etc. (afloat) with distinction as to sex.

Births.

Monthly totals of live-births and still-births, with indication of sex and legitimacy.

Deaths.

Monthly totals according to sex and age.

The age groups are as follows:

0 — 6 months.	10 — 20 years.
6 — 12 months.	20 — 30 years, etc., by 10-year periods to 100 years and over.
1 — 2 years.	Age unknown.
2 — 5 years.	
5 — 10 years.	

Total deaths for each month, according to sex and profession of the deceased, tabulated as follows:

- Intellectual professions.
- Industrial and commercial.
- Public Services (Army, etc.).
- Manual workers.
- Other callings.
- Without profession or not indicated.
- Children less than 1 year of age.

The above six groups are again subdivided into particular professions and callings.

Statistique sanitaire, etc.: Ville d'Anvers.

The Public Health Services of Antwerp, established in 1893, have published annually a comprehensive report, the most recent copy available being that for the year 1915. A brief summary of the contents of these reports is given below:

A review of public health work for the past year.
 Personnel of the Public Health Department.
 Measures to combat the spread of infectious disease.
 Water and Food; Hospitals, etc.

Movement of the population, yearly totals 1816-1915.
 Births, with indication of legitimacy (yearly since 1830).
 Still-births, yearly totals since 1830.
 Total deaths, yearly since 1816.
 Proportions of births and deaths per 1000 inhabitants yearly since 1816.
 Total population with distinction of sex and nationality for the years 1914 and 1915.
 Total population with distinction of sex and age, the age groups being:

0 — 1 year.	10 — 15 years.
1 — 2 years.	15 — 20 years, etc. and by 5-yearly
2 — 5 years.	periods to 95 years.
5 — 10 years.	95 years and over.

Density of population in the 10 different sections of the commune.

Births.

Total births distinguishing sex and legitimacy, together with proportions per 1000 inhabitants.
 Total births for each month, distinguishing sex and legitimacy.
 Total still-births with distinction of sex and legitimacy.
 Total still-births for each month with distinction of sex and legitimacy.

Deaths.

Mortality rates per 1000 living.
 Mortality rates per 1000 living each sex.
 Total deaths with distinction of sex.
 Total deaths with distinction of age and sex:

0 — 15 days.	1 — 2 years.
15 — 30 days.	2 — 5 years.
1 — 3 months.	5 — 10 years.
3 — 6 months.	10 — 15 years, etc., and 5-yearly
6 — 12 months.	periods to 95 years.
	95 years and over.

Total deaths each month with distinction of sex.

Total deaths according to age and civil status, the age groups being:

0 — 1 year.	15 — 20 years, and by 5-year
1 — 5 years.	periods to 100 years.
5 — 10 years.	Over 100 years.
10 — 15 years.	Age unknown.

Total deaths with distinction of place of birth, *e.g.* whether born in one of the provinces or in the commune of Antwerp, or foreign born.

Total deaths of children under 1 year, proportion of such deaths per 100 births with distinction of sex and legitimacy.

Total deaths of children under 1 year for each month of the year, with indication of cause of death.

Total deaths of children:

- (a) under 1 year,
- (b) under 2 years,

together with mortality rates for such deaths per 1000 total deaths, and per 1000 births, for each year 1895 to 1915.

Total deaths of children under 1 year, and children under 2 years, with distinction of legitimacy, and mortality rates per 1000 births, yearly 1895-1915.

Total deaths of children under 1 year with indication of sex, and mortality rates per 100 live-births.

Total deaths children under 1 year and children under 2 years, tabulated according to method of feeding, for each year 1909 to 1915.

Principal causes of infantile mortality 1909-1915, tabulated as follows and method of feeding:

- Diarrhoea and Enteritis.
- Bronchitis and Pneumonia.
- Convulsions.
- Other causes.

The above for children under 1 year, and for children under 2 years.

Total deaths according to sex and causes of death, the Abridged International

List of Causes of Death being used.

Total deaths from 18 principal causes, for each year since 1868. Mortality rate per 10,000 inhabitants.

Total deaths from infectious diseases for the following periods:

1868 — 1877.	1898 — 1907.
1878 — 1887.	1908 — 1914.
1888 — 1897.	1915.

Total deaths from infectious diseases for each month of the year.
Number of cases of infectious disease notified, total deaths, and mortality rates per 100 cases.

Total deaths from infectious diseases, and mortality rates per 10,000 inhabitants, for each year since 1868.

Maps illustrating the streets in which cases of the following diseases occurred:

Typhoid Fever.

Measles.

Scarlet Fever.

Diphtheria and Croup.

A brief review of the mortality during the year, with comparisons with former years for Typhoid Fever, Measles, Scarlet Fever, Whooping Cough, Diphtheria and Croup, and Pulmonary Tuberculosis, together with the following information:

For Typhoid Fever.

Deaths tabulated in age groups — 5 to 10 years, and 5-yearly periods to 65 years.

For Measles.

Deaths tabulated in age groups:

1 — 3 months.

1 — 2 years.

3 — 6 months.

2 — 5 years.

6 — 12 months.

5 — 10 years.

15 — 20 years.

Unknown.

Diphtheria and Croup.

Deaths tabulated in age groups:

6 — 12 months.

2 — 5 years.

1 — 2 years.

5 — 10 years.

Pulmonary Tuberculosis.

Deaths tabulated in age groups:

0 — 1 year.

10 — 15 years, and by 5-yearly periods to 80 years.

1 — 5 years.

5 — 10 years.

80 years and over.

Actual deaths, and mortality rates per 10,000 population, with distinction as to sex, for each year 1858 — 1915.

Actual deaths for each month of the year for each year 1894—1915.

Actual deaths and mortality rates per 10,000 population for each section of the commune for each year 1894 — 1915.

Cancer.

A summary of mortality from this cause for the year under review, and comparison with former years, distinguishing cancer sites.

Tabular classification, with distinction as to age and sex, in the age groups:

0 — 20 years.

20 — 30 years, etc. each 10-year period to 80 years, and 80 years and over.

Map illustrating streets in which cancer deaths occurred.

Mortality rates per 10,000 population, with and without distinction of age and sex.

Actual deaths for each year since 1903, with distinction of cancer sites.

Actual deaths for each year since 1894, with distinction as to sex.

Actual deaths and mortality rates per 10,000 inhabitants for each year since 1894 for each section of the commune.

Violent deaths, indicating profession, sex, and age of deceased:

0 — 16 years.

50 — 60 years.

16 — 25 years.

60 — 70 years.

25 — 40 years.

70 and over.

40 — 50 years.

In addition to the information described above, this volume contains elaborate tabular presentations of the following matter:

- (a) The population, with distinction as to sex and age, for each year of life 0 — 100 years.
- (b) Proportions living at each age, each year of life 0 — 100.
- (c) Summary of births, still-births, marriages, and deaths for each month of the year.
- (d) Actual deaths with distinction as to sex and legitimacy, and in the following age groups:

Less than 24 hours.

1 — 2 days.

25 days to 1 month.

2 — 3 days.

1 — 2 months.

3 — 4 days.

2 — 3 months.

4 — 5 days.

3 — 6 months.

5 — 10 days.

6 — 12 months.

10 — 15 days.

and thereafter, yearly to 100 years

15 — 20 days.

20 — 25 days.

- (e) Causes of death for each month of the year, with distinction as to sex, social condition, section of the commune in which death occurred, and according to the Detailed International List of Causes of Death. 1909.
- (f) Causes of death, with distinction as to sex, and in the following age groups:

0 — 15 days.	1 — 2 years.
15 — 30 days.	2 — 5 years.
1 — 3 months.	5 — 10 years
3 — 6 months.	and by 5-yearly periods to
6 — 12 months.	100 years.

Detailed International List of Causes of Death. 1909.

- (g) Classification of causes of death according to profession, principal causes of death, with distinction as to sex.
- (h) Classification of deaths from principal causes of death for each month of the year.
- (k) Summary of births, still-births, marriages, and deaths 1915, for each section of the commune, indicating in the case of death whether due to one of the following:

Infectious disease.
Pulmonary Tuberculosis.

Other diseases.
Or of children less than 2 years.

9. CONCLUSION.

The student choosing possible subjects of medico-statistical research must bear in mind certain facts of demographical importance.

Belgium is the most densely populated country in Europe — the density of population being due neither to a high birth rate nor to immigration, but to an almost entire absence of emigration. The Kingdom is peopled by two distinct races — the Flemings and Walloons — and if a line be roughly drawn through Brussels, it will divide the country into the districts occupied by the Flemings in the northern plain and the Walloons of the southern hills.

Flemings are largely town dwellers, in a densely populated area sometimes giving rise to slum conditions. In this area, having a density of population never falling below 250 persons per square mile (Brussels 2,400) are found the textile industries which are virtually the monopoly of the Flemings.

The Walloons, on the other hand, though forming three-fourths of the total industrial population of Belgium, are a widely distributed people in an area almost devoid of large towns, living under semi-rural conditions, and mainly engaged in mineral industries.

The mortality statistics of Pulmonary Tuberculosis, the principal Zymotic Diseases, and Infantile Mortality are commented upon in the succeeding pages, but since the value of conclusions drawn from the data presented are necessarily dependent upon the methods of tabulation employed and the reliability of the information contained in the death certificates, certain existing differences between Belgium and, for example, England and Wales and Holland are of importance.

In England and Wales, when two or more diseases or symptoms are recorded on the death certificate, the assignment of the death to a particular heading follows the explicit rules of classification enumerated in the authorised manual. For example, if the primary cause of death is given as Scarlet Fever and the secondary cause as Nephritis, the tabulated cause would be *Scarlet Fever*: where the primary cause is Influenza and secondary cause Pneumonia, the tabulated record would be *Influenza*.

In Holland only one cause of death is asked for on the death certificate.

In Belgium certification of cause of death is not legally obligatory but, when submitted, the certificate employed provides for both the primary and secondary causes of death. As, however, basic tabulations are carried out in the several communes of the realm, and not in the Central Statistical Bureau, and as the

to rigid uniform system of tabulation, the resulting figures are not strictly comparable with those of countries where certification is compulsory and statistical tabulation centralised. The remarks of the Central Statistical Commission of Belgium under heading will be found on page 38, and the observations of M. Camille Jacquart, Director-General of the Belgian Central Statistical Bureau, on pp. 51 and 52 of present volume.

DENSITY OF POPULATION IN BELGIUM.

the Kingdom:

<i>Belgium</i>	252 persons per square mile
England and Wales . .	238 " " " "
Holland	177 " " " "

the Provinces:

Province	Density per square mile	Race
Brabant	1,260	Flemish
East Flanders	970	
Antwerp.	890	
West Flanders	700	
Limburg.	295	
Hainault	860	Walloon
Liege	800	
Namur	260	
Luxemburg	135	

COMPARISON OF RATES OF MORTALITY IN ENGLAND AND WALES AND BELGIUM, 191

All Causes.

	Death Rates per 100,000.			
	England and Wales		Belgium	
	Males	Females	Males	Females
1. Enteric Fever	5.084	3.137	10.69	8.0
2. Typhus	0.016	—	—	—
3. Malaria	0.280	0.047	1.03	0.4
4. Smallpox	0.039	0.020	0.71	0.4
5. Measles	31.181	26.633	23.64	19.6
6. Scarlet Fever.	5.829	5.455	10.42	10.0
7. Whooping Cough	13.507	15.984	25.72	23.1
8. Diphtheria and Croup. .	12.185	12.165	12.29	10.3
9. Influenza	18.832	15.905	13.88	13.5
10. Asiatic Cholera	—	—	—	—
11. Cholera Nostras	0.084	0.068	0.55	0.5
12. Other epidemic diseases .	2.872	2.276	3.69	2.8
13. Pulmonary Tuberculosis .	120.316	84.044	99.29	88.3
14. Tuberculosis Meningitis .	15.002	12.275	7.65	7.9
15. Tuberculosis of other organs	22.097	18.140	18.05	16.9
16. Cancer and other malign- ant tumours	94.747	115.519	64.85	78.1
17. Meningitis	12.493	10.601	33.85	27.4
18. Cerebral Hemorrhage . .	63.997	71.800	104.66	88.5
19. Organic diseases of the heart	130.727	137.353	144.71	152.0
20. Acute Bronchitis	109.273	103.422	35.14	28.1
21. Chronic Bronchitis . . .	—	—	43.16	35.3
22. Pneumonia.	67.788	40.215	81.05	69.4
23. Other diseases of the Re- spiratory system	75.225	60.632	87.70	73.3
24. Diseases of the stomach (not Cancer)	15.864	14.788	28.55	24.0
25. Diarrhœa and Enteritis (less than 2 years) . . .	66.382	49.788	103.61	85.5
26. Appendicitis	7.772	5.990	6.33	4.1
27. Hernia: Intestinal obstruc- tions	11.020	10.916	16.15	14.3
28. Cirrhosis of the Liver . .	12.684	9.085	15.59	11.5

COMPARISON OF RATES OF MORTALITY IN ENGLAND AND WALES
AND BELGIUM, 1913 (*continued*).

All Causes.

	Death Rates per 100,000			
	England and Wales Males	England and Wales Females	Belgium Males	Belgium Females
Acute Nephritis and Bright's Disease . . .	46.784	36.695	19.60	14.71
Non - cancerous tumours and diseases of the female genital organs	—	4.999	—	13.23
Puerperal septicaemia .	—	5.812	—	10.11
Other accidents and diseases of pregnancy and child- birth	—	12.448	—	14.58
Congenital weakness:				
Malformations, etc. . .	106.227	76.595	49.13	39.50
Old Age	74.262	92.516	135.13	153.18
Violent Deaths (not suicide)	62.328	25.788	77.22	18.23
Suicide	14.543	4.815	13.30	11.04
Other diseases	237.318	184.010	188.63	159.09
Diseases unknown or ill- defined	8.786	6.295	58.39	48.38
	1,465.54	1,276.23	1,534.36	1,379.01
Total deaths:	261,687	243,288	58,157	53,070
„ population:	17,857,014	19,062,325	3,790,319	3,848,438

PULMONARY TUBERCULOSIS.

In the concluding chapter of the handbook describing the vital statistics of the Netherlands attention was directed to the contrast between the secular evolution of mortality rates in that kingdom and in England and Wales. It was observed that while prior to 1904 male mortality had exceeded that of females in the ratio of 108 to 138, in the years following 1904 female mortality exceeded that of males, giving a ratio of 100 : 119 in 1921.

Examination of the Belgian figures relating to this disease indicates that it is not only one of the principal causes of mortality — over 10 per cent. of all deaths in 1913 and 6.28 per cent. of all deaths in 1921 being attributed to this disease — but that the following facts, which, in view of the immediate proximity of Holland and Belgium, the density of the population in the latter country, and the high percentage of inhabitants industrially employed, are interesting, viz.:

- a) The Pulmonary Tuberculosis mortality rate in Belgium is, for each sex, much more favourable than that of either England and Wales or the Netherlands.

- (b) The experience of Belgium follows that of England and Wales, in that the mortality among males exceeds that among females, and does not follow the recent experience of Holland.

The figures presented below may therefore suggest the desirability of further enquiry into this matter. At the same time the reader is cautioned that the fact of certification of cause of death not being legally compulsory is not irrelevant. Tuberculosis is one of the diseases, death from which is in some countries and ranks of society held to convey some reflection upon the physical soundness of the family to which the deceased belonged. Where such a prejudice exists, the motive for concealment of the facts may be strong.

Mortality Rates from Pulmonary Tuberculosis calculated per 100,000 living.

	Belgium		England and Wales		Holland	
	M.	F.	M.	F.	M.	F.
1901	143	127	148	105	140	150
1902	138	125	145	102	137	138
1903	114	103	141	99	134	111
1904	117	102	144	103	131	118
1905	112	103	132	94	135	106
1906	112	99	133	96	133	106
1907	106	94	131	95	126	103
1908	107	95	128	93	118	100
1909	108	95	124	90	119	100
1910	101	92	114	84	114	97
1911	106	96	121	88	116	97
1912	104	93	116	84	107	94
1913	99	88	113	81	103	90
1921	86	86	96	75	87	80

INFANTILE MORTALITY

To a nation which has passed through a devastating war, the rate of infant mortality is of capital importance.

Between the years 1901-1910 there was a diminution in the Belgian birth rate amounting to 12% — and it must be remembered that this estimate takes no account of still-births or “children presented dead” who, during the same period approximated 5% of all live births. Deaths of children of less than one year of age form nearly

and if we include children under 2 years of age, nearly 30% of the total deaths in the Kingdom, this rate being exceeded only in Austria, Prussia and Italy.

The experience of the effects of town and rural life upon the course of infant mortality in Belgium is similar to that of England and Wales, but the striking difference between the experiences of the Flemish and the Walloon provinces respectively is remarkable.

Children less than 1 year.

	1906/1910	Deaths per 100 births.	
		1913	1921
Flemish:			
Antwerp.	14.9	13.9	11.1
Brabant	12.8	11.6	10.7
E. Flanders	17.1	15.7	13.5
W. Flanders	19.3	17.5	16.2
Limburg.	12.7	11.5	13.2
Walloon:			
Hainault	10.2	10.5	9.2
Liege	11.3	10.2	8.9
Luxemburg	9.6	8.2	9.1
Namur	9.5	8.6	9.1

Comparative national figures are as follows:

Country	Percentage of all deaths	Deaths per 1,000 live births	Birth Rate
England and Wales	—	161	30.3
Belgium	25.1	172	28.5
England and Wales	24.3	154	28.7
Belgium	25.7	171	28.9
England and Wales	19.5	105	25.1
Belgium	21.0	134	23.7
England and Wales	18.9	108	23.9
Belgium	20.9	130	22.3
England and Wales	15.3	83	22.4
Belgium	18.3	115	21.8

PRINCIPAL ZYMOTIC DISEASES.

Reference was made in the handbook "Official Vital Statistics of the Netherlands" to the experience of that country in respect of Measles, Scarlet Fever, and Diphtheria, compared with the mortality from the same causes in England and Wales. When comparison is instituted with Belgium, it will be seen that Holland retains a favourable position.

Having regard to the fact that Holland and Belgium are immediately adjacent countries, have closely similar climatic conditions, and occupy approximately the same latitudes, it is interesting to note the behaviour and prevalence of the fatality rates from these diseases: the causes of the considerable difference in so far as Scarlet Fever is concerned may in particular deserve study.

Mortality rates per 100,000 living.

		Measles	Scarlet Fever	Diphtheria and Cro
1901	Belgium	29.9	20.7	25.7
	England and Wales .	27.7	13.3	27.3
	Holland	52.6	1.9	17.9
1902	Belgium	47.9	14.4	26.4
	England and Wales .	39.2	14.8	23.7
	Holland	45.8	2.5	15.8
1903	Belgium	33.1	10.0	19.9
	England and Wales .	27.5	12.5	18.3
	Holland	22.7	2.5	12.7
1904	Belgium	39.0	10.3	18.2
	England and Wales .	36.5	11.2	17.0
	Holland	42.8	3.2	12.0
1905	Belgium	34.2	10.6	17.5
	England and Wales .	32.6	11.3	16.1
	Holland	21.4	3.5	10.1
1906	Belgium	34.0	10.8	16.6
	England and Wales .	27.5	10.1	17.8
	Holland	24.9	2.8	8.4
1907	Belgium	27.5	12.7	15.6
	England and Wales .	36.4	9.3	16.5
	Holland	25.9	4.7	8.2
1908	Belgium	40.4	16.3	16.6
	England and Wales .	22.8	8.0	15.8
	Holland	27.2	5.2	8.1
1909	Belgium	35.9	15.9	15.3
	England and Wales .	35.6	0.1	14.8
	Holland	16.6	3.0	7.8
1910	Belgium	34.2	15.0	14.2
	England and Wales .	23.2	3.6	12.0
	Holland	20.0	2.0	6.9
1911	Belgium	22.2	16.6	12.8
	England and Wales .	36.3	5.2	13.5
	Holland	20.8	1.9	7.4

Mortality rates per 100,000 living (continued).

	Measles	Scarlet Fever	Diphtheria and Croup
2 Belgium	31.6	13.1	12.2
England and Wales .	35.1	5.4	11.7
Holland	19.2	3.3	7.6
3 Belgium	21.6	10.2	11.3
England and Wales .	29.1	5.7	12.1
Holland	19.4	1.7	6.9
Belgium	10.4	3.2	9.7
England and Wales .	5.9	5.4	12.6
Holland	9.6	0.9	6.3

10. APPENDICES.

- | | | |
|-----|---|---|
| 1. | Annual summary, Population, Arrivals, Departures. — Table I. | These tables (printed
apart in the original
language) are inserted
between this page and |
| 2. | „ „ Population, Arrivals, Departures. — Table II. | |
| 3. | „ „ Civil Status, etc. — Table III. | |
| 4. | „ „ Births, Marriages, Deaths, etc. — Table IV. | |
| 5. | „ „ Deaths according to age and sex. — Table V. | |
| 6. | Census Schedules: Head of Household | |
| 7. | „ „ Personal Form | |
| 8. | „ „ Collective Form. | |
| 9. | „ „ Agent's Summary. | |
| 10. | Circular regarding "Still-births", dated April 16th, 1880 | |
| 11. | Special Register for Still-births | |
| 12. | Notification of Infectious Diseases. | |
| 13. | Instructions to Inspectors of Hygiene | |
| 14. | Forms of Report used by Inspectors of Hygiene. | |

ROVINCE
ARRONDIS at l'état ci

PROVINCE
ARRONDISSEMENT
GEMEENTE

5019. — Naaml. Maatsch. M. Weissenbruch, drukker des Konings, Brussel.

HUWELIJKEN.

Ouderdom der gehuwd

Mannen: V

GETAL	DER	HUWELIJKEN.	Ouderdom der gehuwd	
			1	2
			Beneden de 18 jaren (1).	
			18 tot beneden de 21 jar. (2)	
			21 tot » de 25 —	
			25 tot » de 30 —	
			30 tot » de 35 —	
			35 tot » de 50 —	
			50 jaren ten minste	
			TOTALEN	

(1) De personen, beneden de 18 jaren oud, zijn degene (N
verschil maar van één uur, maar van één oogenblik.
In geval van huwelijk ten gevolge van ontslag van minder
bij koninklijk besluit toegestaan (min dan 18 jaar voor de va
de dagteekening van dit besluit aan te duiden.
(2) De personen oud van 18 tot beneden de 21 jaren zijn
hebben, zonder nochtans gedurende 21 jaren ten volle te heb

TABEL IV. — Maandelijksche
alsmede der doodgeborenen e
(Uiteenzetting van een

MAANDEN

HUWELIJKEN

GERO

MARIAGES.				DIVORCES.				NAISSANCES		DÉCÈS	RECONNAISSANCES		LÉGITIMATIONS		MORT-NÉS ET AUTRES ENFANTS PRÉSENTÉS SANS VIE.									
Age des mariés.				Age des divorcés.				(non compris les mort-nés et autres enfants présentés sans vie, — qui, d'ailleurs, ne sont pas inscrits aux registres des naissances).		(non compris les mort-nés, etc. — quoique inscrits aux registres des décès.	D'ENFANTS NATURELS		D'ENFANTS NATURELS		(Renseignements puisés spécialement aux registres dont la tenue est prescrite par l'instruction ministérielle du 19 décembre 1873.)									
								Légitimes.		Illégitimes.		dans l'acte de naissance.	postérieurement à l'acte de naissance.	reconnus avant le mariage.	reconnus dans l'acte de mariage.	Mort-nés (enfants sortis sans vie du sein de leur mère)		Enfants présentés sans vie, mais ayant vécu. (Voir les notes du Cadre V.)						
																	légitimes.	illégitimes.	légitimes.	illégitimes.	légitimes.	illégitimes.	légitimes.	illégitimes.
NOMBRE DES MARIAGES.	Moins de 18 ans (1) . .			NOMBRE DES DIVORCES.	Moins de 18 ans (1) . .			Hommes																
	18 à moins de 21 ans (2)				18 à moins de 21 ans (2)			Femmes																
	21 à » de 25 —				21 à » de 25 —																			
	25 à » de 30 —				25 à » de 30 —																			
	30 à » de 35 —				30 à » de 35 —																			
	35 à » de 50 —				35 à » de 50 —																			
50 ans au moins . .				50 ans au moins . .				TOTAUX																
TOTAUX . .				TOTAUX . .				RELEVÉ A.		RELEVÉ B.						RELEVÉ C.								
								Hommes.	dont	enfants trouvés.														
								Femmes.	id.	id.														
								TOTAL.	dont	enfants trouvés.														

Inlichtingen te trekken uit de registers van den burgerlijken stand.

HUWELIJKEN.			ECHTSCHIEDINGEN.			GEBORTEN <small>(niet inbegrepen de doodgeborenen en andere levenloos aangegeven kinderen, — die, overigens in de geboorteregisters niet ingeschreven zijn).</small>		STERFGEVALLEN <small>(niet inbegrepen de doodgeborenen, enz., alhoewel in de st. registers ingeschreven.)</small>	ERKENNINGEN VAN NATUURLIJKE KINDEREN		WETTIGVERKLARINGEN VAN NATUURLIJKE KINDEREN		DOODGEBORENEN EN ANDERE LEVENLOOS AANGEGEVEN KINDEREN. <small>(Inlichtingen bijzonderlijk getrokken uit de registers wier houding is voorgeschreven door de ministeriele onderrichting van den 19^{ten} December 1873.)</small>							
Ouderdom der gehuwden.			Ouderdom der gescheidenen.			5		6	in de geboorte-akte.		erkend voor het huwelijk.		Doodgeborenen <small>(kinderen levenloos uit den schoot hunner moeder gekomen)</small>		Kinderen levenloos aangegeven, doch hebbende geleefd. <small>(Zie de notis der Tabel V)</small>					
Mannen. Vrouwen.			Mannen. Vrouwen.			Wettige. Onechte.			later dan bij het opmaken der geboorte-akte.		erkend in de huwelijks-akte.		wettige. onechte.		minder dan eenen dag, het is te zeggen minder dan 24 uren		eenen dag ten minste, maar minder dan 2 dagen		2 dagen ten minste, maar minder dan 3 dagen	
															wettige. onechte.		wettige. onechte.		wettige. onechte.	
GETAL DER HUWELIJKEN.	Beneden de 18 jaren (1).		GETAL DER ECHTSCHIEDINGEN.	Beneden de 18 jaren (1).		Mannen														
	18 tot beneden de 21 jar. ⁽²⁾			18 tot beneden de 21 jar. ⁽²⁾		Vrouwen														
	21 tot » de 25 —			21 tot » de 25 —																
	25 tot » de 30 —			25 tot » de 30 —		TOTALEN														
	30 tot » de 35 —			30 tot » de 35 —		OPGAVE A.								OPGAVE B.		OPGAVE C.				
35 tot » de 50 —		35 tot » de 50 —		Mannen.	waarvan	vondelingen.							Mannen	Mannen						
50 jaren ten minste .		50 jaren ten minste .		Vrouwen.	id.	id.							Vrouwen	Vrouwen						
TOTALEN		TOTALEN	3	TOTAAL.		waarvan	vondelingen.							TOTAAL	TOTAAL					

(1) De personen, beneden de 18 jaren oud, zijn degene die niet gedurende 18 jaren ten volle geleefd hebben, ware het verschil maar van een uur, maar van een oogenblik.
In geval van huwelijk ten gevolge van ontslag van minderjarigheid, krachtens artikel 145 van het Burgerlijk Wetboek, bij koninklijk besluit toegestaan (min dan 18 jaar voor de jongelingen en min dan 15 jaar voor de meisjes), gelieve men de dagteekening van dit besluit aan te duiden.
(2) De personen oud van 18 tot beneden de 21 jaren zijn degene die ten minste gedurende 18 jaren ten volle geleefd hebben, zonder nochtans gedurende 21 jaren ten volle te hebben geleefd, — en aldus vervolgens.

Algemeene aanmerking. — Er is, in deze tabel, geen quaestie meer van de wettelijke bevolking. — Het getal der geboorten te bestatigen in de opgave A, even als dat der sterfgevallen te bestatigen in de kolom 6, hebben dus geene betrekking met de cijfers ingelascht in de kolommen 1 en 7 der Tabel I.

TABEL V. — Ouderdom der overledenen, in 1923. (Niet inbegrepen de doodgeborenen en andere levenloos aangegeven kinderen.)

Uiteenzetting van de kolom 6 der Tabel III.

TABEL IV. — Maandelijksche opgave der huwelijken, der geboorten, der sterfgevallen, alsmede der doodgeborenen en andere levenloos aangegeven kinderen, in 1923.

(Uiteenzetting van een gedeelte der kolommen van de Tabel III.)

MAANDEN DES JAARS.	HUWELIJKEN	GEBORTEN	STERFGEVALLEN	Doodgeborenen en andere levenloos aangegeven kinderen			
	TOTAAL der kolom 1 der Tabel III.	Opgave A der Tabel III. Mannen. Vrouwen.	Kolom 6 der Tabel III. Mannen. Vrouwen.	Doodgeborenen. Opgave B der Tabel III.	Andere levenloos aangegeven kinderen. Opgave C der Tabel III.		
Januari							
Februari							
Maart							
April							
Mei							
Juni							
Juli							
Augustus							
September							
October							
November							
December							
TOTALEN							
OPGAVE							
	Cijfer gelijk aan het totaal van de kolom 1 der Tabel III.	Cijfer gelijk aan dat van de opgave A der Tabel III.	Cijfer gelijk aan dat van de kolom 6 der Tabel III.	Cijfer gelijk aan dat van de opgave B der Tabel III.	Cijfer gelijk aan dat van de opgave C der Tabel III.		

OUDERDOM DER OVERLEDENEN. (1)	MANNEN. Wettige. Onechte.	WROUWEN. Wettige. Onechte.	OUDERDOM DER OVERLEDENEN (Vervolg).	Mannen	Vrouwen	OUDERDOM DER OVERLEDENEN (Vervolg).	Mannen	Vrouwen	OUDERDOM DER OVERLEDENEN (Vervolg).	Mannen	Vrouwen	OUDERDOM DER OVERLEDENEN (Vervolg).	Mannen	Vrouwen
Beneden éénen dag, dit is zeggen, min dan 24 uren. van 1 tot beneden de 2 dagen			Overdracht . . van 10 tot beneden de 11 jar. — 11 tot » de 12 —			Overdracht . . van 33 tot beneden de 34 jar. — 31 tot » de 35 —			Overdracht . . van 56 tot beneden de 57 jar. — 57 tot » de 58 —			Overdracht . . van 79 tot beneden de 80 jar. (GET. sterfg. van min dan 80 jar.)		
— 2 tot » de 3 —			— 12 tot » de 13 —			— 35 tot » de 36 —			— 58 tot » de 59 —			— 80 tot » de 81 —		
— 3 tot » de 4 —			— 13 tot » de 14 —			— 36 tot » de 37 —			— 59 tot » de 60 —			— 81 tot » de 82 —		
— 4 tot » de 5 —			— 14 tot » de 15 —			— 37 tot » de 38 —			GET. sterfg. van min dan 60 jar.			— 82 tot » de 83 —		
— 5 tot » de 10 —			GET. sterfg. van min dan 15 jar.			— 38 tot » de 39 —			— 60 tot » de 61 —			— 83 tot » de 84 —		
— 10 tot » de 15 —			— 15 tot » de 16 —			— 39 tot » de 40 —			— 61 tot » de 62 —			— 84 tot » de 85 —		
— 15 tot » de 20 —			— 16 tot » de 17 —			GET. sterfg. van min dan 40 jar.			— 62 tot » de 63 —			— 85 tot » de 86 —		
— 20 tot » de 25 —			— 17 tot » de 18 —			— 40 tot » de 41 —			— 63 tot » de 64 —			— 86 tot » de 87 —		
— 25 dagen tot beneden 1 maand.			— 18 tot » de 19 —			— 41 tot » de 42 —			— 64 tot » de 65 —			— 87 tot » de 88 —		
— 1 tot beneden de 2 maanden			— 19 tot » de 20 —			— 42 tot » de 43 —			— 65 tot » de 66 —			— 88 tot » de 89 —		
— 2 tot » de 3 —			GET. st. rig. van min dan 20 jar.			— 43 tot » de 44 —			— 66 tot » de 67 —			— 89 tot » de 90 —		
— 3 tot » de 6 —			— 20 tot » de 21 —			— 44 tot » de 45 —			— 67 tot » de 68 —			— 90 tot » de 91 —		
— 6 maanden tot beneden 1 jaar			— 21 tot » de 22 —			— 45 tot » de 46 —			— 68 tot » de 69 —			— 91 tot » de 92 —		
GET. sterfg. van min dan één jaar			— 22 tot » de 23 —			— 46 tot » de 47 —			— 69 tot » de 70 —			— 92 tot » de 93 —		
— 1 tot beneden de 2 jaren.			— 23 tot » de 24 —			— 47 tot » de 48 —			— 70 tot » de 71 —			— 93 tot » de 94 —		
— 2 tot » de 3 —			— 24 tot » de 25 —			— 48 tot » de 49 —			— 71 tot » de 72 —			— 94 tot » de 95 —		
— 3 tot » de 4 —			— 25 tot » de 26 —			— 49 tot » de 50 —			— 72 tot » de 73 —			— 95 tot » de 96 —		
— 4 tot » de 5 —			— 26 tot » de 27 —			— 50 tot » de 51 —			— 73 tot » de 74 —			— 96 tot » de 97 —		
			— 27 tot » de 28 —			— 51 tot » de 52 —			— 74 tot » de 75 —			— 97 tot » de 98 —		
GET. sterfg. van min dan 5 jaren.			— 28 tot » de 29 —			— 52 tot » de 53 —			— 75 tot » de 76 —			— 98 tot » de 99 —		
— 5 tot » de 6 jaren.			— 29 tot » de 30 —			— 53 tot » de 54 —			— 76 tot » de 77 —			— 99 tot » de 100 —		
— 6 tot » de 7 —			— 30 tot » de 31 —			— 54 tot » de 55 —			— 77 tot » de 78 —			100 jaren ten minste .		
— 7 tot » de 8 —			— 31 tot » de 32 —			— 55 tot » de 56 —			— 78 tot » de 79 —			Ouderdom onbekend .		
— 8 tot » de 9 —			— 32 tot » de 33 —			Over te dragen . .			Over te dragen . .			TOTALEN . .		
— 9 tot » de 10 —			Over te dragen . .									Cijfers gelijk aan degene van de kolom 6 der Tabel III.		

(1) Het kind overleden beneden éénen dag, is datgeen welk geen 24 uren geleefd heeft. — Het kind overleden van 1 tot beneden de 2 dagen, is datgeen welk ten minste 24 uren heeft geleefd, maar minder dan 48 uren. — Het kind overleden van 2 tot beneden de 3 dagen, is datgeen welk ten minste 48 uren heeft geleefd, maar minder dan 72 uren. — Datgeen welk gestorven is in den ouderdom van 1 tot beneden de 2 maanden, heeft ten minste 30 dagen geleefd, maar minder dan 60 dagen. — Datgeen welk gestorven is in den ouderdom van 1 tot beneden de 2 jaren, heeft ten minste 365 dagen geleefd, maar minder dan 730 dagen, — en zoo vervolgens.

Gezien en nauwkeurig bevonden de totalen en hunne overeenstemming.

Nauwkeurig verklaard.

Te , den Januari 1924.

De Burgemeester,

Te , den Januari 1924.

De Gouverneur of de Arrondissementscommissaris,

DOODGEBORENEN EN ANDERE LEVENLOOS AANGEGEVEN KINDEREN.

Opmerking: Het aantal kinderen, waarvan de moeder is overleden, wordt hier niet medegedeeld.

Kinderen levenloos aangegaven doch hebbende geleefd (Zie de noties der Tabel V.)	minder dan éénen dag, het is te zeggen minder dan 24 uren	éenen dag ten minste, maar minder dan 2 dagen	2 dagen ten minste, maar minder dan 3 dagen	over 3 dagen
	over 3 dagen	over 3 dagen	over 3 dagen	over 3 dagen

Mannen	Vrouwen	Totaal

OPGAVE C.

Mannen

Vrouwen

Totaal

ten te bevestigen in de opgave A, even als dat der sterfgevallen te bevestigen in de kolom 6.

grypen de doodgeborenen en andere levenloos aangegaven kinderen.

lom 6 der Tabel III.

DOODGEBORENEN	Mannen	Vrouwen	OVERLEDENEN (Vervolg.)	Mannen	Vrouwen	OVERLEDENEN (Vervolg.)	Mannen	Vrouwen
de 35			van 56 tot beënden de 57 jar.			van 79 tot beënden de 80 jar.		
de 34 jar.			Overdracht			Overdracht		
			— 57 tot » de 58 —			GET. sterft van min dan 80 jar.		

PROVINCIE
ARRONDISSEMENT
GEMEENTE

rd w

door **GEBOORTE**

(niet inbegrepen de doodgeborenen en andere
geven kinderen — die noch in het register va
stand, noch in het bevolking-register wor

Getal der kinderen die, in de gemeente zelve geboren, tot hare wettelijke bevolking behooren.

Getal der ewoo
wettelijke beite.
zelve behoort
gemeente gen den

N. B. Niet verwarren met het gezamenlijk getal der geboorten in de gemeente. Dit getal zal aangewezen worden in de Tabellen III en IV.

N. B. Dezembts.
de bevol. 30 De
schreven,
Koninklijk
cember 19

Mannen . . .

Vrouwen.

TOTAL .

OPGAVE A.

Mannen

Vrouwen

TOTAL.

N. B. — De personen, die, beurtelings in onderscheiden is. (Koninklijk besluit van 30^e December 1900, art 4.)

TAE

BEROEPEN.

ZUID-AMERIKA

**Nederlandsche
Koloniën
van Oost-Indië**

TABEL I. — Algemeene opgave van de beweging der bevolking van gewoon verblijf, gezegd wettelijke bevolking in 1923.

Inlichtingen te trekken uit de bevolking-registers en — zoo het noodig is — uit de registers van den burgerlijken stand, voor hetgeen betrefte de geboorten en sterfgevallen in de gemeenten aangegeven.

	INTREDINGEN				UITTREDINGEN				ALGEMEENE OPGAVE. — Vermeerdering of vermindering der Bevolking.		
	door GEBORTE		door VESTIGING van gewoon verblijf in de gemeente.		door STERFGEVAL		door OVERBRENGING van gewoon verblijf in eene andere gemeente.		Mannen.	Vrouwen.	TOTAAL
	(niet inbegrepen de doodgeborenen en andere levensloos aangegeven kinderen — die noch in het register van den burgerlijken stand, noch in het bevolking-register worden ingeschreven.)		(inschrijvingen in de bevolking-registers gedaan in den loop des jaars.)		(niet inbegrepen de doodgeborenen en andere levensloos aangegeven kinderen — alhoewel in het sterften-register ingeschreven. Zij worden in de bevolking-registers niet ingeschreven.)		(Afschrijvingen uit den bevolking-registers gedaan in den loop des jaars.)				
	Getal der kinderen die, in de gemeente zelve geboren, tot hare wettelijke bevolking behooren.		Inschrijvingen gedaan op aangeving		Getal der personen die, in de gemeente zelve gestorven, tot hare wettelijke bevolking behooren.		Afschrijvingen gedaan op aangeving				
	V. B. Niet verwarring met het gezamenlijk getal der geboorten in de gemeente. Dit getal zal aangegeven worden in de Tabel III en IV.	V. B. Deze kinderen worden in de bevolking-registers ingeschreven in uitvoering van het Koninklijk besluit van 30 ^e December 1900, art. 6.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Ambtshalve verrichte inschrijvingen (Koninklijk besluit van 30 ^e December 1900, art. 18.)	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Afschrijvingen ambtshalve gedaan. (Koninklijk besluit van 30 ^e December 1900, art. 17.)			
			Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.	Personen die uit eene andere gemeente des rijks gekomen zijn.			
Mannen											
Vrouwen											
TOTAAL											
	OPGAVE A.		OPGAVE B.		OPGAVE C.		OPGAVE D.				
	Mannen		Mannen		Mannen		Mannen				
	Vrouwen		Vrouwen		Vrouwen		Vrouwen				
	TOTAAL		TOTAAL		TOTAAL		TOTAAL				

Appendix 6.

Model M.

GENERAL CENSUS OF THE POPULATION, DECEMBER 31st, 1920.

Commune..... Mr. Census Agent.
Administrative Arrondissement..... Number of the series of the Household
Province..... Form.....
Number of persons comprising the household.....

Card for the Head of the Household to be completed by the Census Agent from the Household Form.

No. of series	Questions	Column in Household Form	Answers
1	Sex.	3	.....
2	Date of birth (day, month, year)	5	.....
3	Civil status (single, married, widowed, or divorced)	6	.....
4	Profession or calling: (a) Profession or calling with corresponding classification number of such profession or calling If the head of the household has no profession, use the word "none". (b) For industry, agriculture or commerce, add head, employee or labourer. . . .	9 to 1 9 to 2	..........
5	Place of birth (name of the commune, province or other principal political division of the country)	10	.....
6	Country of nationality	11	.....
			Males Females
7	Number of persons comprising the household: (a) Head of the household (b) Other persons: 1. Related to the head of the household 2. Not related to the head of the household 3. Domestic and other indoor servants of the household Total . . . . .		.........................
8	Number of rooms occupied by the household .....		.....
9	Does the household occupy the whole of the house? Yes No.....		.....

Commune..... Mr.....Census Agent
Administrative Arrondissement Number of the series of the House
Province..... Form

Personal Card required in addition to the Household Forms.

No.	Questions	Answers
1	Surname	
2	Christian names	
3	Sex.	
4	Whereabouts of persons temporarily absent (indicate whether in the same commune, another Belgian commune, or whether in a foreign country) . . .	
5	Date of birth (day, month, and year)	
6	Civil status and number of children (a) Single, married, widow or widower, or divorced . (b) If a married man: 1. Actual date of marriage 2. Number of children living, issue of the marriage 3. Number of legitimate living children by the marriage	
7	Instruction (indicate "yes" or "no" whether able to read and write) -	
8	National languages spoken: (a) French, Flemish, German or "none" (b) If two or three of the languages are spoken, indicate which is most frequently used.	
9	Profession, trade or calling: A. 1. Profession or calling indicating number corresponding to the classification A. 2. For industry, agriculture or commerce, say whether head of the business (master or manager), employee or labourer B. Subsidiary calling if any Without profession, or assisting head of household: (a) Head of household without profession (use the word "none") (b) A person not head of the household (use the word "none" adding profession of head of the household and the corresponding classification number) (c) A person regularly assisting the head of the household (write "assistant" and indicate corresponding classification number and calling of head of household)	
10	Place of birth (commune, province, or other principal political division of the country)	
11	Country of nationality	

GENERAL CENSUS OF THE POPULATION, DECEMBER 31st, 1920.

Information included in the Special Collective Form.

ice..... Mr. Census Agent.
 dissemination..... Number of the series of the special collective
 une form

Questions	Answers
Surname
Christian names
Sex (masculine or feminine)
Permanent address (name of the Belgian commune of foreign country)
Date of birth (day, month, and year)
Civil status and number of children:	
(a) Single, married, widow or widower, or divorced
(b) If a married man:	
1. Actual date of marriage
2. Number of living children issue of the marriage
3. Number of legitimate living children by the marriage
Instruction (indicate by "yes" or "no" whether able to read and write)
National languages spoken:	
(a) French, Flemish, German, or "none"
(b) If all the above languages are spoken, indicate which of these is most frequently used.
Profession or calling:	
A. 1. Profession or calling indicating corresponding classification number
A. 2. For industry, agriculture or commerce, say whether head of the business (master or manager), employee or labourer
B. Subsidiary calling if any
Place of birth (name of commune, province or other principal political division of the country)
Country of nationality

Appendix 9.

Mod

GENERAL CENSUS OF THE POPULATION, DECEMBER 31st, 1920.

Province.....
Arrondissement.....
Commune.....
Enclosures: 4 packets.

Declaration made by
Census Agent, in accordance with Article
to 8 of the Ministerial Order of October 14th, 1920.

Classification of special forms, collective and personal, and enumeration of the inscribed names therein.

Collective Forms	{	Total number of these forms, principal and supplementary number of individuals enumerated therein
Personal Forms		Number of forms, and also the number of persons enumerated therein
		Total number of persons

Tabulation of individuals enumerated in the special, collective, and personal forms, according to their permanent residence.

[illegible]

At the

N.B. — A minute or duplicate copy of this declaration must be retained by the Census Office.

Appendix 10. — CIRCULAR REGARDING STILL-BIRTHS.

MINISTRY OF THE INTERIOR

DEPARTMENT OF PROVINCIAL

AND

COMMUNAL AFFAIRS

GENERAL STATISTICAL RETURNS

Nº 939

copy.

BRUSSELS, April 16th, 1880.

The Governor of the Province of

I had the honour, in my Circular of December 22nd last, to forward to you, for use of the various communes in your province, the printed forms required in the preparation of the statistics of the movement of population and of births, marriages and deaths.

These printed papers included the form intended for the special statistics regarding births, compiled from entries in the register, the keeping of which was prescribed by my Circular of December 19th, 1878.

From the figures which have been forwarded to me, I observe that, whereas the heads of certain districts (*arrondissements*) have thoroughly understood the instructions regarding the filling up of the above-mentioned forms, a certain number of communes in various provinces have not fully grasped their purport, and have consequently made mistakes not only in the special returns of still-births, but also in other returns regarding the movement of population and of births, marriages and deaths. This is due to the fact that they have not strictly observed the previous instructions in this very important part of the work of the communes, and have not fully grasped the meaning of the expression *still-birth*.

I think it desirable, therefore, to call attention again briefly to the principles governing this matter:

1. Under the Civil Code (Article 55) a period of *three days* is allowed for making declarations of births to the Public Registrar.

2. *Children returned as dead* to the Public Registrar must be entered *solely* in the register of deaths, and must *never* be entered in the register of births (Decree of July 1806, Art. 2, and Ministerial Circular of December 18th, 1848).

3. By the term "still-born child" is meant a child whose birth was not registered, which was returned as dead to the Public Registrar (Ministerial Circular of December 16th, 1867).

4. A foetus of less than six months (less than one hundred and eighty-one days) is not to be considered as a still-born child (Civil Code, Art. 213), and may not be entered in the registers of the Public Registrar (Ministerial Circular of December 13th, 1867).

5. In preparing the returns of the movements of population, care must be taken not to include still-births in the total number of deaths, although they are entered in the same register (Circular of December 16th, 1867).

A consideration of the whole of the foregoing provisions will show that the returns of still-births compiled from the register of deaths may include not only children actually born dead, but also children who, although born alive, died on the first, second, or even the third day after birth, but who must be regarded as still-born, if they were not returned as live-births to the Public Registrar, and consequently are not to be entered in the register of births.

The following are the rules to be observed in regard to still-births when entered in the various tables for the movement of the population and the civil register.

1. The table for the *movement of the population* (specimen No. 1) should include *still-births*, either among births or among deaths.

2. Columns 2 and 8 (*births*) in the special birth return (specimen No. 11) should only include *registered births*, excluding still-births, which should only be entered in columns 9-15 (*still-births*). The inclusive total for the latter should be identical with the total for still-births entered in the special *still-birth return*, irrespective of whether the child lived or not.

3. *No still-born child*, irrespective of whether it lived or no, should be entered in the *return of deaths by ages* (specimen No. III a).

4. Finally, all children who are returned as still-born to the Public Registrar, who in consequence are not entered in the birth register, should be classified in the *special still-birth return*, according to whether they lived or not; foeti under six months old should not be included in the return. Still-born infants which have lived for less than twenty-four hours should be included amongst still-born infants which have lived a day. To sum up, the special statistical table for still-births is compiled up for purely administrative purposes (circulars of December 19th, 1878, and December 22nd, 1879), and is not to be included either in the birth returns, death returns, or in the table for the movement of the population according to the civil register.

I should be glad if you would recommend district commissioners (*commissaires d'arrondissement*) and communal administrations to comply strictly with the foregoing instructions, and have the present circular published at the earliest possible date in the administrative journal of your province.

Any returns which you may have sent to me or which may reach me subsequently and which fail to comply with the instructions referred to, will be sent back to you for correction at an early date.

(Signed) G. ROLIN-JACQUEMYNS,
Minister of the Interior

Appendix 11. — SPECIAL REGISTER OF STILL-BIRTHS

Date of declaration	Number of the entry in the Register of Deaths	Still-births Recorded in the Register of Deaths															
		Born Dead.				Born alive and having lived:											
		Leg.		Illeg.		One day				Two days				Three days			
						Leg.		Illeg.		Leg.		Illeg.		Leg.		Illeg.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.

Appendix 12. — NOTIFICATION OF INFECTIOUS DISEASES.

CULAR TO THE MEDICAL PROFESSION GIVING DETAILS OF THE
NEW REGULATIONS IN REGARD TO THE INFORMATION SERVICE.

BRUSSELS, June 15th, 1922.

I have the honour to draw the attention of the Doctors in Medicine who exercise
art of healing in Belgium to the Royal Decree annexed hereto which was issued
tecuton of the Health Ordinance of July 18th, 1831, and provides for the notifi-
on of all *ascertained* or *suspected* cases of the following transmissible diseases:
era, plague, smallpox, typhus and relapsing fever.

The notification must be made:

1. To the Government Health Inspector by the doctor who diagnoses the case
in the absence of a doctor, by the person attending the patient.

This information must be given by official telegram as soon as the case is observed.

2. To the Burgomaster of the Commune in which the case occurs by the head
e household; in the absence of the head of the household, by the members of
atient's family over 18 years of age and present in the house, or in the absence
atives, by the principal occupant or by the person in whose house the patient
ged or resident; or in their default by any person attending the patient.

Notification must be made not later than twelve hours after the case has been observed.

I must draw the attention of doctors to the fact that failure to observe the above provisions would expose the persons concerned to prosecution; but the Government is confident that, realising to the full the importance of their responsibilities to society in this connection and true to their high traditions of self-sacrifice and solidarity, doctors will see to it that the provisions of the Decree are scrupulously observed.

The Government has decided to maintain the system of notification established by the circular of April 17th, 1907, and to increase from two to five francs, as from August 1st, 1922, the remuneration granted to doctors for notifications made to the Health Inspector.

Accordingly;

1. *Practitioners will receive a remuneration of five francs for each notification made by them to the Health Inspector;*

(a) *in all ascertained or suspected cases of:*

- cholera
- plague
- typhoid fever
- paratyphoid fever
- typhus
- relapsing fever
- epidemic dysentery
- diphtheria
- cerebro-spinal meningitis (epidemic)
- smallpox
- scarlet fever
- encephalitis lethargica

(b) *in all verified cases of:*

- human hydrophobia
- puerperal septicaemia (when secrecy is not asked or is not necessary)

2. The payment of the remuneration is subject to the following conditions:

(a) The notification of cases must be made within the regulation periods:

As regards epidemic diseases, namely cholera, plague, smallpox, typhus, relapsing fever, the notification must be made *by official telegram* immediately after a case has been observed; for the notification of the first case of these epidemic diseases the remuneration will be fixed at 20 francs, if the nature of the disease is subsequently confirmed by bacteriological or clinical examination;

The notification of the other diseases must be made not later than twenty-four hours after the case has been observed;

(b) The notification must be sufficiently complete to enable the Health Inspector to make use of the information given and it shall in all cases include the following: exact address of the patient, the date on which the case was observed, the nature of the disease, the age and profession of the patient and, in the case of children, the school they attend.

On application to the Health Inspector of the district, doctors can procure forms of information free of charge.

(c) The notification should specify the bacteriological research laboratory, if any, to which the suspected article has been sent for examination.

Doctors must not, however, wait until they have learned the results of the bacteriological examination before making their notification.

* * *

Articles sent to the provincial laboratories and to those of the Health Inspectors for bacteriological examination will be conveyed by the post free of charge.

Special receptacles must be employed for the despatch of cholera-infected matter; the Government has deposited stocks of such receptacles at the offices of the Health Inspectors and of the Provincial Medical Commissions and in the provincial bacteriological laboratories; they are delivered free of charge for the collection and despatch of cholera-infected matter for examination.

Such cholera-infected matter should be sent to the laboratories by express post. Expenditure incurred will be repaid by the Department. Further, an additional sum of five francs will be paid to doctors notifying an ascertained or suspected case of cholera in conformity with the regulations, when they despatch matter infected with cholera to the said laboratories in conformity with the cholera instructions issued up by the Central Board of Public Health for the use of the medical profession. The above will apply to the first despatch of faecal matter allowing a diagnosis of cholera to be established with certainty and subsequently to one despatch per week during convalescence until two consecutive examinations show that these excretions no longer contain cholera vibrios.

The conveyance by post of plague-infected matter being strictly prohibited, the Health Inspector will apply by telegraph (official telegram) to the Health Inspector, who will have them collected on the spot.

I take this opportunity to recall the following facts:

There is no postal charge for correspondence between doctors and the Health Inspectors.

At the request of doctors, the Health Inspectors are bound to carry out free of charge laboratory investigations with a view to determining the origin of the epidemic, and to trace and disinfect the germ carriers.

At the request of the doctor attending the case, the Health Inspectors will free of charge the Sanitary Inspectress of the Department to instruct persons living in the vicinity of infectious patients in the measures of disinfection to be taken during the course of the disease.

I also wish to remind Doctors in Medicine that they must conform with the "*Practical instructions on the prophylaxis of transmissible diseases*" which were drawn up by the Central Board of Public Health and circulated in due course to the medical profession.

On application to the Government Health Inspectors, doctors may obtain free of charge copies of these instructions and tracts on prophylactic measures for the use of the public.

(Signed) PAUL BERRYER
Minister.

Appendix 13.

PUBLIC HEALTH INSPECTION
INSTRUCTION No. 14

REPORTS AND DOCUMENTS TO BE FORWARDED BY INSPECTORS
OF HYGIENE TO THE CENTRAL ADMINISTRATION.

Monthly Report.

Each month Inspectors of Hygiene will prepare and forward to the Central Administration a report of all movements, visits, and work accomplished during the preceding month.

Such reports will be forwarded not later than the 8th day of each month, in order that they may reach the Central Administration by the 10th of the month.

These reports are designed to indicate what work has been accomplished during the month.

Nevertheless, a special report must be forwarded to the Central Administration for each inspection made which has special reference to the sanitary condition of a particular area, or where the inspection follows the outbreak of a serious epidemic, or the occurrence of a case of infectious disease which presents features indicating possibility of a rapid spread of the disease.

Such supplementary reports referring to such cases will be sent for the purpose of announcing the results of laboratory examinations, to indicate what prophylactic measures have been taken for the purpose of limiting the spread of the disease, and to describe what steps have been instituted to trace "carriers" and to disinfect them. Inspectors will also indicate to the Central Administration all developments occurring within their province having hygienic, sanitary, or epidemiological importance.

Should there be an outbreak, or rapid increase of smallpox, typhus, or similar disease, Inspectors will keep the Central Administration daily informed of the progress of the epidemic.

In those cases where Inspectors make their visits for the purpose of advising local administrations of their public health obligations, or to advise upon matters of public health interest, or to visit the services or institutions within the jurisdiction of local sanitary authorities, reports of such visits are unnecessary except where unusual conditions are noticed, or where, in the opinion of the Inspector, there occur sufficiently interesting or important to report.

The 10-Day Reports.

The 10-day summaries will report all notifications received between the 1st and 10th days, the 11th and 20th days and the 21st day and the end of each month. They must be forwarded to the Central Administration not later than the day following

each closing day in the above periods, that is to say, on the 11th, the 21st, and the 31st day of each month.

In the last column or on the first page, Inspectors will carefully record their observations of the subject of the diseases (*i.e.* what inspections have been made, what advice given to local authorities, intervention of the Inspector with the doctor, despatch of the district health visitor to the area, disinfection operations, isolation hospital, report sent to Central Administration, etc.).

3. *Short Report regarding the state of Public Health in the District.*

Inspectors must include in their last 10-day report in each month a summary report on the state of public health in their area.

This report must be condensed into a few lines for each separate disease, the situation in general, with their conclusions regarding the situation, special remarks applicable to the subject in the localities described, the number of cases, death causes, and origin of the epidemic; bacteriological, biological and chemical examinations effected, prophylactic measures taken, "carriers", disinfections, vaccinations and indication of the results of these measures.

This report will survey only the principal diseases recorded (typhus, diphtheria, etc.), and will not examine others except in those instances where a serious epidemic appears and presents features which ought to be reported.

4. *Report on the Disinfection Service.*

Inspectors of Hygiene, who have at their disposal a disinfection service, are responsible for sending each month a report of the activities of that service.

The Form to be used for this purpose is attached (Appendix 14). Similarly, Inspectors will forward to the Central Administration before February 15th each year a report of the work of the disinfection service during the preceding year, the form being used for this purpose.

5. *Laboratory Work.*

Inspectors having at their disposal a laboratory will likewise furnish each month a report of their laboratory work.

6. *Annual Report of the work of Inspectors.*

Each year, before February 15th, Inspectors will forward to the Central Administration a report covering the whole field of their activities during the preceding year. This report will be framed in accordance with the requirements of the attached Form (Appendix 14).

Annual Report of the Work of the Laboratories in Eastern Flanders, Luxemburg and Limburg.

Each year before February 15th, Inspectors in charge of a bacteriological laboratory maintained at the expense of the State for doctors within their area must send to the Central Administration a report of the work of the laboratory for the preceding year.

This report must not be published without first obtaining the permission of the Ministry.

Form of Annual Report.

Bacteriological Examinations	Number of Examinations	Positive Results
Typhoid or Paratyphoid		
Diphtheria		
Tuberculosis		
Cerebro-Spinal Meningitis		
Gonorrhoea		
Other Infectious Diseases		
<i>Various Examinations</i>		
Blood, Gastric Juices, Urines . .		
Stools		
Drinking Water } Bacteriological analyses		
} Chemical analyses . .		
Drinking Waters		
Total . . .		

Annual Report of the Work of District Nurses.

This report must be sent in each year to the Central Administration before February 15th.

Various Documents.

The preparation of the report and documents stated above does not exempt Inspectors from sending to the Central Administration other documents which are required by preceding instructions, and particularly reports of important documents, travelling expenses of Inspectors, District Nurses and Disinfectors, miscellaneous expenses, report of the work of the motor vehicles of the Service, etc., etc.).

GOVERNMENT SERVICE
OF
DISINFECTION

Province.....
or
Arrondissement.....

1. Date of commencement of duties
2. Number of Communes in the Arrondissement
or Province
3. Number of Communes entitled to the Service
4. Number of subscribing Communes
5. Work of the Service in 192

[illegible]

Month	Number of disinfections	Number of habitations	Number of rooms	Quantity of Disinfectant		
				Formaldehyde	Sublimate	Cresylic Acid
January ...						
February ..						
March						
April.....						
etc.						
Total for the year						

Cost of the Disinfection Service.

th	Salaries for employees	Travelling expenses of employees	Travelling expenses of the Inspector	Cost of Disinfectant	Cost of Cartage			Total
					Petrol	Oil	Various	

Steps taken to improve the Service.

Number of visits to communal administrations, and number of communes visited, with, in parenthesis, indication of the results obtained.

Have doctors been informed of the existence of the Service ?

On receipt of a notification of infectious disease, is the doctor declaring such a case advised of the existence of the disinfection service ?

Other means towards publicity.

Is supervision organised by the Inspector of Hygiene for the administration of the Service ?

Is the Inspector informed of date and hour of each disinfection ?

Report (monthly, quarterly) furnished on the activities of the Service ?

Remarks.

For the purpose of persuading communes to participate in the Service, or for the super-
t disinfections.

11. BIBLIOGRAPHY.

Recensement général 1910. 5 volumes.

(Census results. Population, age, sex, civil status, etc.)

Publié par le Ministre de l'Intérieur et de l'Hygiène.

Mouvement de l'état civil et de la population en Belgique 1875-1900.

(Movement of population — births, marriages, deaths.)

(Extrait du Tome XIX du Bulletin de la Commission centrale de Statistique)

Publié par le Ministre de l'Intérieur et de l'Hygiène.

Annuaire statistique de la Belgique.

(Annual statistical summary — population, births, deaths.)

Publié par le Ministre de l'Intérieur et de l'Hygiène, Administration
Statistique générale.

Bulletin trimestriel.

(Quarterly vital statistical summary).

Publié par le Bureau de la Statistique générale du Ministre de l'Intérieur
l'Hygiène.

Bulletin de l'Administration de l'Hygiène.

(Quarterly summary; cases of infectious disease, etc.)

Publié par le Ministre de l'Intérieur et de l'Hygiène.

Annuaire sanitaire de la Belgique.

(Annual report containing statistics of births, deaths, etc.)

Publié par le Ministre de l'Intérieur et de l'Hygiène, Administration du
de Santé et de l'Hygiène publique.

Bulletin de l'Administration du Service de Santé et de l'Hygiène, 1914-1918.

(Report of activities of Public Health Services.)

Publié par le Ministre de l'Intérieur et de l'Hygiène.

Relevé officiel du Royaume de Belgique.

(Summary of population figures.)

Publié par le Ministre de l'Intérieur et de l'Hygiène.

LEAGUE OF NATIONS

Health Organisation

HEALTH ORGANISATION IN DENMARK

Five Conferences given in Denmark on the Occasion of the Interchange
Study Tour organised for Medical Officers of Health from Twenty-one
Countries by the Health Organisation of the League of Nations, June
July 1924.

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1924¹⁵

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 27. CHROM : The Sanitary Organisation of the City of Copenhagen.
 28. NIELSEN : The Municipal Hospitals of Copenhagen.
 29. OLLGAARD : The Rigshospital : Its Administration and Management
 30. HEIBERG : The Housing Conditions of Copenhagen.
 31. HERTZ : Medical Inspection in Schools in Copenhagen
 32. BENDIX POULSEN : The Summer Holidays of Copenhagen Board-School
Children
 33. BUDTZ JØRGENSEN : Dental Treatment of School-Children in Denmark.
 34. POUL SÆRENSEN : The Water Supply of Copenhagen.
 35. S. MALM : Waterworks outside Copenhagen.
 36. KARSTEN : Copenhagen's Drainage System.
 37. LUTKEN : The Disposal of Sewage in Denmark outside Copenhagen.
 38. WESTERGAARD : The Alcohol Question in Denmark
 39. KNUDSEN : Physical Training in Denmark
 40. CHRISTIANSEN : The Rat Campaign in Denmark.
 41. DJÆRUP : The Work of a Medical Officer of Health
 42. BENDIX POULSEN : The Social and Sanitary Conditions of a Danish Rural
District (Landkommune) : " Veerst-Baekke "
 43. AMMON ANDERSEN : School for Children of Weak Sight.
 44. EJLER HOLM : Other Schools for Children with Weak Sight
 45. TRYDE : The Hospitals in Denmark
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PREPARATORY NOTE.

On April 11th, 1924, elections for the Danish Folketing (House of Commons) took place. The elections resulted in a complete change of Government, the former Liberal Government being succeeded by a Socialist Government. One of the first acts of the latter was to distribute among three Departments, *viz.*, the Home Office, the Ministry of Justice and a new established "Social Department", those matters concerning public health which had formerly been under the Ministry of Justice. Under the Home Office, as the central administrative authority, come all matters concerning local authorities : county councils, parish councils, and town councils ; and health affairs concerning these institutions, such as sanitary regulations, matters concerning hospitals, housing midwifery, combating of epidemic diseases, etc., will hereafter in future be dealt with by the Home Office. Under the Social Department (sanitary institutions of the State, *viz.*, the State mental hospitals, the State Hospital of Sønderborg, the State Lying-in Hospital at Aarhus and the institutions mentally deficient ; while only special judicial matters concerning the Legal-medical Council (*Retslægeraadet*), the activity of the health officers in their capacity as advisers to the courts, post-mortem examinations, coroners' inquests, cremation, fighting of venereal diseases, legislation concerning opium, quarantine regulations and control have remained under the Ministry of Justice.

As a consequence of these changes in the sanitary administration, several corrections in the articles have become necessary, which, however, owing to lack of time, were not made before going to press ; but as the changes in all essential respects relate only to the formal dealing with the matters in the various offices they will have no important influence on the understanding of the individual articles.

PREFACE.

The object aimed at in the compilation of the treatises contained in this collection has been to afford the members of the interchange of health officers organised by the League of Nations' Health Organisation, who are taking part in the study tour in Denmark, a fairly exhaustive description of the various conditions existing in the health affairs in this country. The more remote lying parts of the kingdom, the Faroe Islands and Greenland, which will not be visited on the tour, have consequently not been included.

To define precisely what material is best calculated to serve this purpose was not at all easy. It is possible that certain instructive data may be found not to have been included, whilst, on the other hand, it may be thought that other particulars might perhaps have been omitted; but as far as possible everything has been included. It may be expected to be of practical interest for medical officers engaged in the Danish Health Service.

The articles have been prepared by different authors, which will account for the possible lack of uniformity in the treatment of the various subjects; but the description and criticism of the sanitary conditions and of the value of sanitary legislation to the Danish community is in accordance with the prevailing opinion of the various administrative departments.

At all events, it is hoped that the description contained in the following pages will be found to afford a fairly comprehensive impression of the present state of the health service in Denmark, its development through the years, and also the trend of the service followed as conforming with the characteristics of the people and the country, in view to the attainment of the best possible results.

DENMARK : THE COUNTRY AND ITS POPULATION

BY Dr. G. TRYDE,

President of the National Board of Health.

Denmark has an area of 43,016.89 sq. km. It is a flat country mainly under cultivation, and only 8 per cent of Denmark proper is wooded. The climate is insular, with an average temperature of 6.6° C.; maximum temperature 31.7° C., and minimum -10° C. in 1922.

According to the census taken on February 1st, 1921, the number of inhabitants was 2,267,831 — 7,597 people to each 100 sq. km. Jutland, with an area of 29,647.31 sq. km., forms the greatest part of the country and has a population of 1,498,479, or 50.5 per 100 sq. km.; the remainder of the country consists of large and small islands, of which 169 are inhabited; their aggregate area amounts to 13,369.58 sq. km., and they have a population of 1,769,352, or 13,234 per 100 sq. km. The density of the population is mostly due to Copenhagen, with its 700,610 inhabitants. About 57 per cent of the total population live in the rural districts, the remainder in Copenhagen and other boroughs.

owing to the nature of the country, a far greater proportion of the population has been occupied in agriculture than in any other industry. During the last decade, however, the number of people employed in trades has greatly increased and the consequence has been a great influx into the towns; but 31 per cent of the population earn their living by agriculture, horticulture and forestry, only 23 per cent earning their livelihood by industry and handicraft.

The people are, on the whole, healthy, and the average height of the men doing compulsory military service is 169 cm. The people live under fairly good conditions, though at times there may be some distress, particularly from unemployment. In 1921, there were about 1,500 blind people, about 1,800 deaf and dumb, about 10,000 mentally deficient, and about 6,300 lunatics.

THE GOVERNMENT OF THE COUNTRY.

The form of government is a limited monarchy in which the legislative power lies with the King and Parliament, and the executive with the King and the responsible ministers chosen by him, who are each at the head of a special department of the administration.

The Central Government.

At present this comprises the following ministries :

The Ministry for Financial Affairs.
The Ministry for Commerce.
The Ministry for Home Affairs.
The Ministry of Justice.
The War Office.
The Ministry for Agriculture.
The Ministry for the Navy.
The Ministry for Public Works.
The Ministry for Foreign Affairs.
The Ministry for Ecclesiastical Affairs.
The Ministry for Education.

Under the central administration is *the local administration*, which is executed by the lords-lieutenant (*Amtmaend*) and chief constables (*Politimestre*), the lords-lieutenant acting as intermediaries between the chief constables and the Central Government.

For administrative purposes the country is divided into 23 *Amler*, or counties, each under a lord-lieutenant, and the counties are again divided into 72 districts, each with its chief constable.

The city of Copenhagen has its own special government — the magistracy, which is directly responsible to the Central Government and is not subject to the county.

These authorities see that the laws in force are complied with, but otherwise the local government proper is in the hands of the councils of the self-governing districts, the counties (*Amslkommuner*), parishes (*Sognekommuner*) and boroughs (*Købstæder*).

The Counties.

Each county forms one district, with three exceptions, each of which is divided into two. In each county a *county-council* (*Amstraad*) is elected, with the lord-lieutenant as chairman, for attending to local affairs (education, roads, hospitals, etc.). The rural districts of the county are divided into a number of parishes, of which there are about 1,130 in the whole country. A *parish council* (*Sogneraad*), which elects its own chairman, deals with all the parish affairs in which the county is not concerned.

Finally, there are the *boroughs*, which are independent of the county. There are 88 boroughs, and each borough elects a *town council* (*Byraad*), which elects its own chairman.

These councils are all elected on the system of proportional representation, on very democratic lines, and women have equal voting rights with men in all elections.

Local government in Denmark has been considerably developed and covers not purely municipal duties but also certain State duties, or, at all events, duties of



MAP OF DENMARK.

al interest to both the State and municipality, as, for instance, the poor-relief, public schools and other public health affairs, etc. The municipal councils their share of the necessary funds through municipal taxes and rates.

In medical respects the country is divided into 26 county medical areas (*Amtslægekredse*), each with its own county medical officer (*Amtslæge*). These districts correspond to the counties and are subdivided into 80 districts (*Kredslægekredse*), each with a district medical officer (*Kredslæge*), which correspond to the police districts, with exception of eight police districts which each comprise two medical districts.

The city of Copenhagen also manages its own medical officers.

With each lord-lieutenant there is a county medical officer, and with each constable a district medical officer as adviser.

Finally, the country has a special division in legal and ecclesiastical respects.

HEALTH SERVICES.

Under the Central Government direct are the medical services, quarantine, lunatics and mentally deficient, workmen's accident insurance, and the head administration of the approved sick-benefit clubs.

Under the local government and with grants from the State are : the combating epidemic and venereal diseases, including consumption and the supervision of the of children, etc., in accordance with Acts of Parliament.

The fact that the municipalities obtain grants only in return for compliance with certain demands made by the State has resulted in the State developing these services according to its own ideas, instead of, however, trespassing on the field of local government.

The following affairs are under local government without grants from the State : the general hospitals, the poor-relief institutions, school hygienics, public slaughterhouses, meat-controlling stations, supervision of the local health conditions, etc. These, the central administration merely superintends.

This supervision is divided among the particular ministries.

Municipal affairs are under the *Ministry of Home Affairs*, and that part of the health affairs which can be called municipal also falls under this ministry (for instance hospitals and homes for the aged, etc.).

The Ministry for Education deals with the training of physicians, pharmacists, dentists and midwives, together with their respective institutions, school hygienics and institutions for mentally deficient.

The Ministry for Public Works deals with the sanitary conditions on railway and air services, etc.

The Ministry for Agriculture deals with veterinary affairs, dairies, slaughterhouses, meat control, etc.

The Ministry of the Army and Navy deals with the military health affairs.

The Ministry of Justice supervises health affairs e.g., quarantine, epidemic consumption and venereal diseases, the administration of mental hospitals and, a

training, everything connected with medical officers, doctors, dentists, midwives, chemists, and approval of regulations laid down by the health department of the municipalities.

The principles of the health administration are, of course, laid down in the Acts passed by Parliament. The latter are, as most Danish Acts of Parliament, rather summary, and in many things they leave it to the ministry in question to make further provisions within the scope of the Act. The ministry itself may also leave it to the municipal councils to work out detailed regulations subject to approval by the ministry.

THE NATIONAL BOARD OF HEALTH (SUNDHEDSSTYRELSEN.)

In order to ensure uniformity and to obtain expert opinion in health administration, the National Board of Health has been constituted as an intermediary between the ministries, particularly the Ministry of Justice and the local health department.

This was established in the year 1909 and superseded the Royal Health College, which for over a hundred years, from 1803-1907, had attended to the health services of the country under the Ministry of Justice.

This college consisted of ten physicians and two dispensing chemists, and was divided into five committees consisting of a chairman and a number of physicians and chemists.

Its work was divided into three parts : (1) advising the ministries on the work of the central administration ; (2) directing the work of the medical officers ; supervising the latter, the practising physicians, dentists and midwives ; supervising hospitals, mental hospitals, asylums for mentally deficient and similar institutions ; advising in all matters connected with the health department ; undertaking the whole of the medicinal statistical work ; (3) making legal medical declarations before the courts.

For all these different branches of work the Royal Health College had to be equipped with the best special expert knowledge, and the consequence was that it gradually became too large and cumbersome, procedure became too complicated and protracted, responsibility was divided, and initiative impaired. Professors at the university, chief physicians at the larger hospitals, the chief physicians in the army, etc., were expected to be both experts and administrators. As all members, with the exception of the chairman, were unsalaried, supervision by the College of the sanitary institutions rested only on paper.

The present National Board of Health differs essentially from the Royal Health College in that the giving of legal medical declarations is entrusted to a special institution independent of the National Board of Health, *viz.*, *The Legal Medical Council (Lægeeraadet)*, which is directly responsible to the Ministry of Justice. The issue of these declarations necessitates the possession of special expert knowledge. The National Board of Health, however, is composed of persons who both represent special expert knowledge in health matters and are conversant with health administration. It might have been divided into a consultative scientific section and an administrative section, but it was thought best to have one institution in order to avoid having, on the one hand, theoretical scientific advisers and, on the other, officials ignorant of medical science and medical work with tendencies towards bureaucracy. The object

was to facilitate business procedure and to concentrate the main administrative responsibility in the President of the institution.

Since 1909 there has been therefore in Denmark a National Board of Health and a Legal Medical Council, with the composition and work of which I will now speak.

The relations of the National Board of Health to the Central Government. The National Board of Health is under the Ministry of Justice. Its affairs are therefore subject to the same treatment in the Ministry of Justice as other matters dealt with by that ministry. But it has under all circumstances the right to submit questions direct to the Minister and also the right to negotiate with him. The National Board of Health is also the expert adviser to the other ministries which deal with health matters. As a rule, applications are made through the Ministry of Justice, and the same is the case with applications from the National Board of Health to these Ministries. By applying through the Ministry of Justice, the National Board of Health strengthens its influence by securing the support of the Ministry and so ensure that every question receives consideration.

The composition of the National Board of Health. At the head of the National Board of Health is the Chairman — who must be a physician — appointed by the King.

The Board consists of two departments : the *Medical Council (Lægeraadet)* and the *Council of Dispensing Chemists (Apotekerraadet)*.

In each of these two departments a *vice-president* is appointed by the Ministry of Justice for six years, a physician and a dispensing chemist in turn. In the absence of the Chairman, the Vice-Chairman of the Medical Council takes his place in both departments.

Attached to the National Board of Health are a number of *expert advisers* on various health questions, appointed by the Minister of Justice on the recommendation of the Board.

At present, the advisers are :

Hygienics : the Professor in Hygienics at the Copenhagen University.

Pharmacology : the Professor in Pharmacology at the Copenhagen University.

Bacteriology and epidemiology : the Head of the State Serum Institute.

Lunacy : the Head of a large clinic for milder cases of lunacy and sufferers from nervous complaints.

Consumption : the Head Physician of a large hospital for consumptive patients.

A medical practitioner who is also a head physician at a large children's hospital.

A dentist who is a teacher at the school of dentists.

A pharmaceutical member employed at one of the large dispensing chemists in Copenhagen,

The Director of the Pharmaceutical Training Institution.

The presence of a practising physician and a pharmaceutical member on the National Board of Health ensures expert advice in practical matters.

The Work of the National Board of Health.

The National Board of Health superintends the execution of health legislation and its regulations, whether in hygienics, in matters pertaining to disease, the work of physicians, dentists, dispensing chemists and midwives or the institutions in connection therewith, etc. The National Board of Health has, in fact, the right to investigate all matters of health.

The Board has to travel to the provinces to make itself acquainted with the local health services. The trips are undertaken by the President or, with his approval, by the Vice-President or one of the advisers. By conferences with the local medical officers, exact information is procured as to the conditions and sanitary arrangements in the towns or country, and hospitals, children's homes, asylums, etc. are inspected in the presence of the medical officers. The Board sees whether the institutions are crowded and whether they have been erected in accordance with the plans submitted to the National Board of Health, and inspects the sanitary and food conditions, but does not, as a rule, interfere in the medical treatment at the different institutions. A careful inspection is made of the State mental hospitals (lunatic asylums) and the various institutions for consumptive patients all over the country, as these institutions are carried on by means of considerable grants from the State. The National Board of Health has access to all institutions which are subject to special sanitary provisions.

The Ministry of Justice is empowered to insist on stricter supervision but has not found occasion to do so.

If defects are discovered in the course of this inspection the National Board of Health negotiates with the authority in question, as a rule with the medical officers or intermediaries, and, if it is found that the sanitary provisions are being contravened, notifies the authority concerned and may have the matter brought before the courts.

The National Board of Health is a consultative body for the different branches of administration, and it furnishes reports on sanitary conditions when requested to do so. It frequently assists the local councils in working out plans for hospitals, in framing up health regulations, etc. Health questions submitted to the Ministry of Justice are, as a rule, submitted to the National Board of Health.

The National Board of Health approves the plans for all buildings, larger reconstructions or extensions of hospitals, children's homes, charitable or nursing institutions, etc., which are wholly or partly erected with public funds.

The National Board of Health makes proposals to the State or municipal councils on all health measures which it considers necessary. It may demand the maintenance of regulations in force, and, by the issue of circulars, it instructs physicians, dentists, dispensing chemists and midwives, instructs the people in special health measures or conditions respecting diseases, etc.

In ordinary matters, the National Board of Health, with the approval of the Ministry of Justice, may summon medical officers to a meeting at which also representatives of the municipal councils, existing organisations or technical experts can be invited to attend.

5. A very important duty has been vested in the National Board of Health in cases where one of the above-named persons under the supervision of the Board is accused of being a danger to his fellow-men, owing to a chronic or intermittent recurring abnormal state of mind consequent upon sickness or the abuse of narcotics or to gross incompetence in the exercise of his duties. Such matters are submitted to the Medical Council of the Board, or, if the matter concerns a chemist or chemist's assistant, to the Council of Dispensing Chemists of the Board. The Council has to afford the party in question an opportunity of giving an explanation either in writing or verbally. The Medical Council (or the Chemists' Council) obtains a declaration from the Legal Medical Council, which may be given either in writing or verbally. After the case has been stated, the party summoned declares whether he wishes to have his case submitted to the courts or whether he will submit to the decision of the Ministry of Justice. If he does not desire this or can give no declaration on this point the matter is taken before the courts.

The principal contents of the declarations which are given verbally at the meetings are entered in the National Board of Health Records, which are read out and approved. Even if the matter has to be judged by the courts the Medical Council (or the Chemists' Council) immediately decides whether there is any risk in allowing the party in question to continue at his work. In such case all the documents in the matter are sent to the Ministry of Justice with a recommendation that until further notice the party in question be prohibited from continuing his work. If it is absolutely necessary the National Board of Health itself is entitled to lay down such a prohibition at once but it must at the same time notify the Ministry of Justice and as soon as possible recommend its prohibition for ratification by the Ministry of Justice.

The final decision is therefore made by the Ministry of Justice or the courts. The Minister of Justice has to institute proceedings against the party summoned in accordance with the ordinary rules. No costs are imposed for these proceedings.

There have hitherto been no cases of gross incompetence in connection with the discharge of professional work, and only a few arising from the abuse of narcotics. The decision is sometimes made by the Ministry of Justice and sometimes by the courts, and all decisions have so far been in the form of temporary prohibitions.

The prohibition can be removed when the circumstances justifying it no longer exist. The decision as to when this moment has arrived is taken by the Ministry of Justice, even if the matter is decided by the courts, but if the Minister will not accept the evidence produced by the party in question the latter may demand that the matter be brought before the courts unless the reasons for the production of the case are judged to be unaltered or if one year has not elapsed. A prohibition or decision maintaining a prohibition lasts as a rule for a year. If a case is taken up again before the courts the proceedings are not free of charge.

Such a prohibition is, however, not the only decision which can be taken. Although it has never occurred, there is nothing to prevent the prohibition applying only to certain aspects of the work or consisting in the ordering of a lengthy stay in a hospital to cure a habit, etc.

If the defendant is a chemist the decision may consist of a ruling that the shop be carried on in the way determined by the Minister of Justice or of a cancelling the right to carry on the shop to dispense medicine or to trade in any chemist's in the country. If the defendant is an assistant at a chemist's he may be deprived of the two last-named rights. If the decision be not complied with he is punished according to the ordinary regulations prescribed by the penal law.

These provisions do not aim at contraventions against the ordinary civil laws. Regulations for dealing with gross civil infringements come under the ordinary law, which provides that persons charged may, as an additional penalty, be deprived of the right to exercise their profession.

This method of procedure is not without difficulties, but the object is both to warn the people against possible risks and to secure the parties in question a fair treatment. As the majority of persons would be ruined by this loss of the right to exercise their profession, the measure is made only a temporary one, although it is very difficult in certain cases impossible to decide when the prohibition can with safety be removed.

The National Board of Health has to prepare public announcements. When a municipal medical officer paid by the State falls vacant or a dispensing chemist's licence expires available, the Board examines the applications and recommends candidates to the authorities concerned.

The National Board of Health has no such right when a municipal post falls vacant — for instance, a post at one of the municipal hospitals — but it is bound to give its opinion on the applicants when requested to do so by the municipal authorities. However desirable it may be for all appointments to be made by the National Board independently of the local conditions of the applicants, it has not been considered expedient to intervene in this right of the municipal authorities.

Special duties devolve upon the Council of Dispensing Chemists. The supervision of chemists is mainly exercised by special visiting inspectors, who, once a year and as often as the National Board of Health considers it necessary, inspect the chemists' shops and their stocks of officinal medicine, etc., all over the country; but the National Board of Health has the right through the members of the Chemists' Council to inspect the chemists' shops whenever it is considered desirable.

If the Chemists' Council considers that new dispensing chemists' shops should be opened or existing chemists' shops closed, a recommendation is sent in accordingly to the Ministry of Justice.

The Chemists' Council appoints a medicinal auditor to work out a tariff of drugs and fixed prices. This is issued by the National Board of Health, and the Chemists' Council decides if, in consequence of considerable variations in prices, alterations should be made in this tariff. Where doubt arises, the National Board of Health decides the final decision.

The National Board of Health collects, prepares and publishes medical statistics. If a medical practitioner fails to send in reports, the National Board of Health can impose fines of from 2 to 10 kr. upwards per day — a right which, however, it only exercises rarely.

9. *The National Board of Health publishes annually :*

The National Board of Health Annual Report.

The Medicinal Report for the Danish State.

The civil medicinal legislation.

Causes of death in the Danish realm.

Report from the mental hospitals of the State and of Copenhagen.

List of authorised physicians, dentists and veterinary surgeons in Denmark.

Medicine tariff for the dispensing chemists in Denmark.

Veterinary medicine tariff applying to the chemists and veterinary surgeons in Denmark.

Every month a schematic list of cases treated in the Kingdom of Denmark.

Every tenth year a ten-years resumé of the causes of death in the Kingdom of Denmark.

The sphere of activity of the National Board of Health comprises the whole Kingdom of Denmark, the Faroes and Greenland. Only the health departments of the army and navy and the medical scientific and pharmaceutical training institutions do not fall under the National Board of Health, but it has, in cases of interest to it, the right to negotiate direct with the head medical officers in the army and navy and the head veterinary surgeon, without using the State department concerned as intermediary, the usual procedure in the central administration.

The Office of the National Board of Health. To assist the National Board of Health in carrying out its work, it has an office which, besides the head, consists of a medical secretary, a legal secretary, an archivist and two clerks. The statistical work is carried on in a separate office by a doctor with three assistants.

Forms are supplied by the offices of the National Board of Health to its various branches and also to the customs authorities, the counties and the borough treasury offices (*Købmærkerkontorer*) and to the ecclesiastical and burial authorities (death certificates).

There are at present 103 kinds of forms.

The business procedure of the National Board of Health. Questions referred to the National Board of Health are all submitted to the Chairman after having passed through the office. Matters of routine and of minor importance are decided at once by the President. Questions concerning the Chemists' Council are dealt with in consultation with the Vice-President of the Chemists' Council. Questions which require a more detailed treatment, and particularly special expert treatment, are sent by the President to the technical adviser on that particular subject. The adviser then gives a report in writing to the Vice-Presidents of the Chemists' Council and the Medical Council, and the latter submits it, with his own comments, to the final decision of the President. These questions are normally dealt with in a Council of three of the National Board of Health, but, if any of these, and particularly the President, desires one of the other advisers summoned, the question is submitted to this adviser before a decision is taken. Ordinary matters of interest to the Medical Council or the Chemists' Council are submitted to them at meetings, and if the matter concerns both the Medical and Chemists' Council a joint meeting is arranged.

On the basis of the Rules of Procedure of the National Board of Health drawn up by the Ministry of Justice and valid for five years, a regular practice has gradually developed for the selection of the adviser to deal with the individual cases. There are, however, certain cases which by law must always be submitted to certain advisers. For instance, the practising physician must always take part in questions concerning the work of physicians, midwives, nurses, etc., particularly of those who become a danger to their patients through abuse of narcotics, illness or gross incompetence. Further, this adviser helps to judge applications for vacant medical appointments and takes part in negotiations regarding Bills in Parliament and the issue of regulations for practising physicians.

The Dental Adviser attends to all dental questions, and the advisers of the Chemists' Council deal with the issue of chemists' licences.

As the Vice-President on the Medical Council acts as the President of the National Board of Health when the latter is unable to attend, he has to keep himself acquainted in all matters referred to the Chemists' Council.

If agreement is not reached by those taking part in the judgment of a case, each give a special vote to which the other party may always attach its comments, and each can ask to see the reply prior to it being despatched from the Board.

The cases which the National Board of Health receive from the Ministries are always replied to in writing, but this does not prevent verbal negotiations with the Ministries through the President, and possibly the Vice-President or the summoned adviser.

The budget of the National Board of Health is as follows :

	Kr.
Salaries and office staff	117,186
Printed matter (annual reports, forms and postcards for reporting births, etc.)	43,000
Bacteriological investigations and details of causes of deaths.....	27,000
Deputies for medical officers and continuation courses ...	20,000
	<hr/>
	207,186

Matters dealt with in 1923 :

	Number.
1. Medical officers, their duties and rights, activities and conditions, medicinal statistics, etc.	230
2. Medical practitioners, their activities and conditions ...	46
3. Dentists, etc., their activities and conditions.....	88
4. Midwives, their activities and conditions	58
5. Measures against contagious diseases	80
6. Hospitals, sanatoriums, asylums, etc.	268
7. Old-age homes, maintenance institutions, schools, children's homes.....	102
8. Other hygienic questions and conditions.....	300
9. Matters concerning discharge, pension, invalid support, etc.	70
10. Sundry other matters	634
11. The activities and conditions of chemists, etc., trade in medicine, etc.....	374

The Legal Medical Council was established by Act No. 111 of April 30th, 1909, the central administration of the National Board of Health.

The Legal Medical Council has to give the medical, scientific, or pharmaceutical advice necessary to determine the legal position of individuals. In addition to giving advice to the National Board of Health, the Council furnishes any reports requested by the different departments, the courts, the indictment authorities and the higher magistrates.

All medical certificates of a legal nature can be sent in for revision by the Legal Medical Council.

The work of the Legal Medical Council covers the Kingdom of Denmark and Greenland. In contradistinction to the National Board of Health, the Legal Medical Council also deals with the administrative judicial work of the army and navy.

The Legal Medical Council is under the Ministry of Justice. It consists of thirteen members appointed by the Crown for a period of ten years, who must be experts in medical jurisprudence, psychiatry and obstetric medicine.

The Council elects its own chairman.

The Ministry of Justice nominates, on the recommendation of the Legal Medical Council, a number of experts for periods of ten years, and, of these, one or more are summoned to sit in the place of, or together with, regular members of the Council in special cases or when a case is sufficiently important to make it desirable that more than three members should make the decision.

Amongst those nominated there must be a practising physician who makes statements as to prohibitions of the exercise of profession by a person who comes under the supervision of the National Board of Health.

If none of the nominated members possess sufficient special expert knowledge, the Council can make a recommendation to the Ministry of Justice.

At present the Council consists of :

The Professor in Medical Jurisprudence at the University.

A head physician at one of the State Lunatic Asylums.

The Professor at the midwife school at the lying-in Ward B of the State Hospital " Rigs Hospital ".

The experts appointed are :

The Professor in Pharmacology at the University, for cases of poisoning and pharmaceutical affairs.

The Professor in Pathological Anatomy at the University, for obduction cases.

A former head physician at the ward for nervous cases at the " Kommune Hospital ", for psychiatric questions.

A medical practitioner for giving the declarations mentioned above in " The Work of the National Board of Health ".

The Professor in dermato-venerology at the University, for venereal questions.

• The Professor in Operative Chirurgy at the University, for surgical questions.

The legal medical investigations requiring laboratory work which are ordered by the Legal Medical Council or the legal physicians of the country are referred to

ical Jurisprudence Institute at the University. The pharmacological institute at the University or another laboratory undertakes legal chemical investigations.

The Legal Medical Council votes either by letter or verbally at meetings held when necessary.

In cases of prohibition of the exercise of profession, the Health Committee proposes a statement from the Legal Medical Council made either in writing or at a joint meeting of the Council and the National Board of Health.

Matters dealt with in 1923 :

	Number.
1. Financial	177
2. Paternity matters	1,097
3. Other matters '	103

including child murder, concealment of birth, moral crimes, transmission of venereal disease, violence and bodily injury, homicide, poisoning, judging of medical declarations, erroneous treatment and offences in professional work, adultery, insurance and invalidity cases, civil law questions and abortion.

GENERAL STATISTICS

(Births, Marriages and Deaths.)

BY H. WESTERGAARD,

Professor of Statistics at the University of Copenhagen.

The three *Scandinavian* countries, with their homogeneous population and high standard of education, may justly pride themselves on the completeness of their vital statistics. In *Sweden*, the census may be traced back in time almost 200 years. In *Norway* and *Denmark* it is of somewhat later date, though in these countries, we may follow the fluctuations of the population through several generations. In the population of the three countries numbers about 12 millions, of which well over three millions live within the 43,000 square kilometres constituting the area of Denmark. It is the vital statistics of this latter country we are here going to consider.

For the information of the reader it may be stated that up to 1864 the three duchies of Slesvig (Southern Jutland), Holstein, and Lauenburg belonged to the monarchy of Denmark. By the Treaty of Peace of Vienna in 1864, Denmark had to cede these countries to Prussia and Austria with a population of about one million people, of which well over 400,000 lived in Slesvig. There remained in 1860 a population of 1,600,000. But in 1920, part of Southern Jutland, *viz.*, about 4,000 square kilometres, with about 160,000 inhabitants, was restored to Denmark. A large number of Danes living south of the new boundary-line had, however, to remain under German rule. It may be remarked, however, that within the narrow limits of the Kingdom of Denmark the population had, in the course of the 21 years after the cession in 1864, increased by just as many inhabitants as were contained in the whole of Slesvig at the peace of Vienna. On the whole, Denmark belongs to the densely-populated countries, showing in 1921 an average of 76 inhabitants to the square kilometre, against 12 in the U.S.A.

Vital statistics have gradually reached a high degree of *technical development*. Their chief centre in Denmark is the Statistics Department. In addition to this State institution, there is a Municipal Statistics Office in Copenhagen. Only health statistics, thereunder statistics relating to the causes of death, are assigned to a special institution (the National Board of Health).

The chief basis of our knowledge concerning the statistical facts of the population is the *census*, which has been taken every five years in the present century, the last time on February 1st, 1921. Outside Copenhagen, two of these census counts, those of 1886 and 1916, were, however, dealt with in a more summary way, that of 1916 having, however, served as the basis of detailed income statistics. Of great statistical value, too, is the census of trades and industries last taken in 1914. February 1st is chosen as the date of the census, on the ground that at that time of the year the population is most stationary.

It may be assumed that, practically speaking, the census has been brought to a great degree of *accuracy* as could be desired. That sources of error still remain

cannot be denied. For instance, it has proved impossible to procure information so accurate for about 10,000 people. This, it is true, is only a small proportion, not more than three per 1,000 of the population, and as a rule this source of error is unimportant. Even if, to avoid accumulation near the *round* numbers, very accurate information is sought as regards the day and the year of birth, there will still be a certain accumulation here, probably because many people count back from the time of the census to the birth-year. The most difficult task of the census is perhaps to find out the number of "temporarily resident", those whose stay in a place is of a transitory character, and the corresponding number of "*temporarily* absent". Of persons temporarily resident in 1911, 30,000 stated their place of residence to be elsewhere within the boundaries of Denmark. Only 20,000 temporarily absent persons were registered as living elsewhere in Denmark, whereas no information was given concerning 4,000. Presumably it will always be difficult to get full particulars about the temporarily absent, but in comparison with the total population this source of error is only slight.

It will in course of time be possible to remedy to a great extent this defect, as a new system is being built up by the introduction of *national registration*. Registers were introduced in the metropolis on February 1st, 1922, and they will shortly be introduced in all other municipalities throughout the country. The name and address of every person is registered on a card on which the necessary alterations are made at every departure or arrival. For the present this system has, of course, no direct connection with vital statistics, but when it is utilised to centralise the registration of marriages, births and deaths, particulars of which are now obtained from the clergy, the possibility of obtaining vital statistics that will serve as a model in every respect will have been provided. But it will presumably be some time before this reform may be expected. We may, however, mention that, in the *southern* districts of *Jutland*, there were, even before the restoration to Denmark, personal registers, one for each *village* and parish, in which marriages, births, and deaths were entered, and this system was retained.

As mentioned before, the population of Denmark is singularly *homogeneous*. In 1911, only three per cent of the population were born outside the boundaries of Denmark, the majority of these being in Sweden, Norway, and Slesvig, to whose population the language presents few difficulties. Only 25,000 persons were born in other countries. It is to a great extent in the *cities* that these foreign elements are found.

As regards *religious communities*, too, there is great homogeneity. In 1912, only about two per cent of the population did not belong to the established church (the Lutheran church) and only 6,000 of these were Jews.

The conditions of the people in Denmark in the nineteenth century underwent, like so many other countries, an entire change, owing to the *great and steady* increase of the population which was unknown in previous centuries. In 1769, there were 800,000 people in Denmark (not counting the part of Slesvig restored in 1920). In the course of the next 30 years, the population showed an average annual increase of one-half per cent, but from the beginning of the nineteenth century there was a much greater increase. In 1801, there were 930,000 people, and at the census of 1870 this number was almost doubled, the population then being 1,785,000. Apart from the

incorporated southern parts of Jutland; the number of inhabitants was about 3,100,000 in 1921, which means it had doubled in 64 years.

This great increase in the population has entirely altered the *character of the country*. At the beginning of the nineteenth century, the proportion of rural inhabitants to urban inhabitants was about four to one, but this ratio has suffered a complete change. The metropolis alone numbers almost as many people as there were then in the whole country, *i.e.*, in 1921, about 700,000, and the old towns and boroughs have almost as many. But to these towns, with their old-world historical atmosphere, have been added within the last 30 years a great number of new developments, such as residential areas in the neighbourhood of railway stations. If these are included, it appears that considerably over half the population (55 per cent) live in towns. At the same time the *character of the scenery* has altered, the old closely-built villages surrounded by fields and commons tend to disappear, the farms are farther apart and stand more scattered, each surrounded by its own fields, and where before there was a long distance between houses, the reverse is now the case.

In common with so many European countries, but in contrast to the U.S.A. Denmark shows an *excess of females* over males, having five per cent more females than males, whereas the U.S.A. have four per cent less. It is the higher mortality among men and their more frequent emigration which reduces their original surplus. The numbers of young men and women are equal, but after that the female sex preponderates more and more, though in Denmark, as in all other parts of the world, more boys are born than girls.

Age distribution shows various peculiarities. On a rough estimate it may be said that, according to the census of 1921, barely one-third of the population is under 20 years, about 10 per cent between 15 and 20, and barely half in the specially productive age between 20 and 60, while one-tenth is over 60. These values show a *considerable change*. Within the old boundaries there were in 1921, less children than 10 years previously, though the population during this space of time had increased by 12.13 per cent. The cause of this is the decreasing frequency of births, which we shall discuss below. The change is most marked in the *southern parts of Jutland*, where the war augmented the decline in the birth-rate. In these districts, we also find with comparatively low figures for men between the ages of 25 and 40, a fact likewise explained by the war.

With regard to the *marital conditions*, the Danish census gives the usual peculiarities. That the figure for *married* women is slightly higher than that for married men may be explained by the absence abroad of sailors and others. The number of *widows* is more than double that of *widowers*. On an average there are annually about 5,500 *widowers*, against 7,200 *widows*, but the higher mortality of widowers and their greater inclination to remarriage greatly reduces their ranks again. A very important point in statistics is the number of *divorced* or *partially divorced*. A great deal of uncertainty will always prevail here. That women are in excess here, too, will easily be understood. All in all, about 12,000 persons of both sexes were registered under this head in 1911, but the figure is rapidly increasing.

With the excellent *technical aids* now available, important enquiries are easily conducted in relation to the census. Of great interest is the detailed enquiry into

composition of marriages within the various classes of the population. This enquiry considers the duration of the marriage, the ages of the wedded people, and the number living or dead children in the marriage. The great differences appearing here from class to class are of much importance as a means of understanding the decreasing frequency of births. It is also of interest to study the connection between the *number of children* in marriages of the same duration and the death-rate among the children. On this point Danish statistics have made important contributions that deserve to be better known. An enquiry of this description was made in connection with the census of 1901.

On another point, too, the census will be able to supply valuable information, with regard to the *distribution of age* within the *various occupations*. As early as the eighteenth century, the interest of this question was recognised, and the census of 1801 was prepared with reference to social stratification. It was a laborious task, and took many years. Each individual was registered with a dot under the heading in which he belonged according to his occupation, his marital condition and his age, and the result has thus obtained an interesting contribution to the understanding of the social structure of the time. The simple structure of the community in those days rendered it possible to set down the total result of this count on a few pages. Now the task has grown infinitely more complicated, but, on the other hand, there are more aids at our disposal, and detailed information of those facts has thus been secured. The report of the census of 1911 shows the distribution of the bread-winners according to marital condition and age in a considerable number of occupations, and in all, 140 heads with division according to sex. That there are only seven age-classes is a drawback, but it would not be impossible to utilise this material for the calculation of death-rate tables for the individual occupations similarly to what has been done in England in the famous enquiries in connection with the census. With modern aids for the preparation of such data, an interpolation of the figures in order to supply a more detailed age division with sufficient certainty will be possible.

Above I touched on the question of the *birth-place* of the population. This question, too, may be elaborated by the aid of the census. It is rather a complicated one, even if it is only desired to deal with it in its broad features. The great increase of the population and the growing division of labour give rise to constant migrations. Thus, in 1911, of the Danish-born population of the metropolis, over two-fifths were born outside the town, while of the Danish-born inhabitants of the provincial towns about half came from the rural districts. If there were no migrations, the rural population would be one-fourth more numerous and that of the metropolis would be reduced by one-seventh. The whole of this subject may be studied as a feature of the changes in the population as a whole; the enquiry having for its object to find out what is annually lost or gained by these *migrations*. These investigations will be much facilitated when, as in Copenhagen, particulars as to the date of the migration to the town are sought.

And behind this problem, which is only now beginning to be dealt with, lies the very important problem of the transition from one *condition in life* to another, from employed to employer, etc., a problem for the solution of which the census may give valuable indications. To what extent the son remains in the father's trade or occupation, the degree of social stability in the community; the circumstances of those who rise in the social scale during the struggle for existence — all this is, of course, of the greatest sociological importance.

This gives rise to the question of the *movements* of the population, and here, again, official Danish statistics have valuable contributions to make, especially as regards *marriages* contracted, and *births* and *deaths*, whereas immigration and emigration are less clearly shown.

With regard to the average of about 25,000 marriages registered annually in recent years, this figure must not, of course, be considered merely in its relation to the total population: it must be split up so that the *individual classes* of marriageable men and women according to their *age, occupation, etc.*, can be investigated. Here, as in all other countries, the difficulty arises that the marriage does not always take place in the home community of the contracting parties and that, simultaneously with contracting the marriage, they often enter upon another occupation. But with this reservation Danish official statistics exhibit a number of interesting results.

We have thus information as to the probability of a *bachelor* or a *widower* contracting marriage. It is seen that widowers in all age-groups have a much greater marriage rate than bachelors, a fact which does not appear on a superficial consideration of figures. For women we have the opposite result: young unmarried women marry much more frequently than widows at a corresponding age. Later on, the figures always balance. On an average, *marriage frequency* is greatest for the men in the *large towns* but is not greatest for the women in towns, a fact which must be considered in connection with the large surplus of women in the towns. There are interesting comparisons between the *respective ages* of brides and bridegrooms — a section of marriage statistics which might be elaborated in various directions, as might also the statistics concerning the frequency of marriages *between widows and widowers*, bachelors and spinsters, etc., and those concerning the frequency of third and fourth marriages, and marriages between persons of different religion, occupation or social order. As one branch of all these investigations by which marriage statistics have in more recent years been elaborated in Denmark may be mentioned the average marriage age in the *different classes*. It is seen that labourers on the soil generally marry far earlier than independent farmers, and industrial workers earlier than independent artisans.

Statistics concerning marriages also bring to light various interesting particulars as regards the distribution *over months and days of the week*. That Sunday is a frequent day for marriage is easily understood, but the distribution over the other days of the week is very unequal: Monday especially is unpopular, whereas Tuesday is much in demand, likewise Friday and Saturday.

The dissolution of the marriage tie either by *death* or *divorce* presents many subjects for enquiry. Divorce statistics, however, require further development, and more temporary interruption of married life termed *separation* especially requires elucidation. As regards separation, the Statistics Department has no material for its disposal, but regular information with respect to *divorces* by decree is obtained. The various subjects for enquiry are obvious, thus the causes of divorce, the duration of the marriage, the number of children, etc. As the number of divorces has increased rapidly of recent years there is every inducement to study these questions more closely. As the census fails to elucidate the number of divorced people exactly, it will hardly be possible to enter more deeply into the question of the frequency of remarriage among divorced people.

Birth statistics have undergone a rapid development in Danish official statistics. The most conspicuous feature is a great decline in the birth-rate. Throughout

terpart of the nineteenth century it kept at the same level, *viz.*, 31 per 1,000 of the population annually. Some decline might be observed in a few classes, but not enough to influence the figure for the entire country. But at the close of the century an incipient change was observed, and in the present century the decline has been considerable. In 1900-1909, there were on an average 29 births per 1,000, in the years following 25; in 1921 the figure had sunk to 24 and the year after to 22. An entire revolution has thus taken place in these conditions. Hence it is of great interest to study the subject more closely, partly by considering the number of children in extant marriages, as mentioned above, partly by elaborating the material at disposal with regard to births. I shall not here consider the particulars available with regard to the distribution over the different parts of the country, the statistics concerning still-born children, etc., subjects that have been dealt with in so many other countries. It may be mentioned, however, that in Denmark particulars are available concerning the *age of child-bearing women*, both married and unmarried. It is especially in the older age groups that the great decline appears. In 1890-1894, out of every hundred married women of an age from 16 to 19, 63 gave birth to children; in 1911-1915, 57; at the age 20 to 29, the figures were 37 and 30 respectively; but at the age of 40 to 44, 11 and 7. In the reports for 1911-1915, an attempt has been made to combine these particulars with the particulars concerning the *occupation of the parents*, a subject which presents great possibilities of developments. As regards *still-birth*, official statistical enquiries have been made into the influence of the age of the mother, a subject which demands simultaneous consideration of the class in which the birth occurs, concerning which no private material is as yet available.

Mortality has shown a great decline since the beginning of the former century. In the first decade of the former century the average death-rate was 24 per 1,000 annually, 50 years later it had decreased to 20, and another 50 years later, at the beginning of the present century, to 15; in 1910-1919 it was 13, and next year 12. On account of this rapid decline there is a constant surplus. In 1922, with 74,000 live-births, the number of deaths was 39,000, so that the excess of births almost equalled the number of deaths. How this will be in future it is impossible to say, though there is reason to suppose that the death-rate will decline for some time yet under the influence of hygienic and economic progress.

Evidence of the decline in mortality is afforded by the *average expectation of life*, which in 1840-1844 was about 42 years for a newly-born child, at the close of the century about 52 years, and in 1911-1915 even 58 years.

The calculation of *death-rate tables* has been carried out with ever-increasing accuracy. The chief basis is the number of the population and the number of deaths. The average population was formerly calculated by taking the average of two successive censuses for the population. The course now is to consider, as far as possible, the fluctuations from year to year, particulars regarding emigration being now included. With regard to the *deaths*, a division according to age and year of birth is aimed at. The death is now reported in groups of one year, whereas formerly it was reported in groups of five years. Distribution according to birth-year is found by means of interpolation.

For the infantile years the *birth-figures* are employed, and more detailed information as regards age and time of death is here available, so that the grouping according to the year of birth can now be carried out with considerably greater accuracy than before.

We may assume that the table of death-rates for the whole country shows considerable accuracy, but it is more difficult to ascertain the facts as regards the *separate parts of the country* and in individual classes. A difficulty arises in enquiries into the death-rate of legitimate and illegitimate children owing to legitimation upon the marriage of the parents, and in comparisons between town and country owing to mortality in hospitals used both by town and country dwellers. In addition to this there may be other fluctuations difficult to verify. For a single year, however, the difference in the death-rate has been investigated on the basis of the birth-place instead of the place of death, so that a general estimate of this source of error has been obtained.

Mortality according to age and marital position has also been examined. It would appear that the death-rate of married men is much lower than that of the unmarried; at the dissolution of marriage an increase in mortality is again apparent. Also with regard to women the figures favour the married as against the unmarried, though the difference, of course, is not so pronounced as in the case of the men.

As regards mortality according to *occupation*, we are as yet only in the first stages. The only point on which official statistical studies have been undertaken is infant mortality according to the occupation of the parents, whereas official statistics have not as yet made any enquiries into the death-rate in the various occupations. In this field, however, several enquiries have been carried out by private investigators.

The preceding statement will, it is to be hoped, show that Danish statistics on many points compare favourably with the statistics of other countries, but, at the same time, there are various fields in which considerable development is possible.

DANISH MEDICAL STATISTICS.

By Dr. H. J. HANSEN,

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The definition of the term "medical statistics" necessarily varies according to the subjects which are comprised under the name: the whole mass of vital statistics may be included — the changes in the population caused by births, deaths, migration, marriages, etc. — or the term may be limited to denote the statistics of mortality and morbidity only. The mortality statistics in their turn may include various subjects: they may be taken to comprise all statistics relating to deaths (such as the causes of death, the age, place of residence, whether in town or country, occupation, rank, and state whether married or not — of the deceased, the mode of death — whether caused by disease, accident, suicide, or murder, etc. — sanitation, etc.), or as being confined to the actual causes of death and their incidence on the various classes of the population according to sex, age, place of residence, etc.

What subjects are included in the medical statistics of any given country depends on various causes. If the institutions dealing with medical statistics have been called into existence by the central authorities of the country, it rests with the latter to determine from the very start what subjects are to be dealt with under the heading of medical statistics; in such cases, the scope of the latter is likely to be considerable. If, on the other hand, the medical statistics have sprung up, as it were, spontaneously, and have developed by gradual steps as the various legislative and administrative authorities in charge of sanitation, scientific investigators, and others have felt the want of them, they will generally be found to include a minimum of subjects.

The latter has been the case in Denmark, where the origins of the present system of medical statistics date back to the middle of the eighteenth century, when the body known as the Medical College began, for sanitary reasons, to demand notification of the occurrence of infectious diseases. These notifications were not, however, thrown into the form of statistics and do not seem to have been published till 1838, when they were printed in a periodical called *The Medical Library* (*Bibliothek for Læger*). From 1838, they were published in the Year-Book of the Royal College of Health (*Sundheds-Årbog*).

The volume of this publication for 1858 contains a table of mortality for the city of Copenhagen. In 1862, things had progressed so far that it became possible to print, in the same publication, schedules showing the cases of disease notified both in Copenhagen and in the eleven districts into which the country was then divided for medical purposes. In these schedules the cases were grouped according to month and age, the latter group containing three classes (under 2 years of age, from 2 to 15, and over 15). In the last class the figures for men and women were given separately. Finally, in 1872, cases of disease occurring in the towns and in country districts were published separately, and by 1877 the morbidity statistics had swelled to such dimensions

that they were taken out of the Year-Book of the College of Health and printed in the annual *Medical Report for the State of Denmark* (*Medicinalberetning for den danske Stat*), published by the Royal College of Health and, from 1909, by the National Board of Health (*Sundhedsslytelsen*), which in that year replaced the former.

This *Medical Report*, which originally contained only morbidity statistics and information of an epidemiological character, has gradually developed in various directions. It now contains, in addition, hospital statistics, sanitary information in a more or less statistical form, statistics of children born alive, stillbirths and irregular births, information about precautions taken against infectious diseases and alcoholism, and statistics relating to the staff of the Public Health Service, etc.

After the passing of the Inquest Acts (*Ligsynslovene*) of January 2nd, 1870, and May 4th, 1875, statistics of the causes of death are also included in the Danish medical statistics. Till the end of 1889, these statistics were prepared by the Government Bureau of Statistics (*Statens statistiske Bureau*), but from 1890 the task was taken over by the College of Health, while the rest of the mortality and birth statistics continue to be prepared by the Government Bureau of Statistics, or the Statistical Department, as that institution is now called. Till the beginning of 1920, the death certificates issued in the towns constituted the only material available for the preparation of death statistics. In country districts, death certificates may be issued by the functionaries called *Ligsynsmænd* if the residence of the deceased was situated at a distance of more than two kilometres from that of the nearest doctor, and, as these are not medical men, they can hardly be relied on to ascertain the cause of death with absolute certainty. In 1920, provision was, however, made for the verification of such death certificates by the doctor who had attended the deceased, and all deaths are now subject to statistical treatment.

It is a well-known fact that no medical statistics are absolutely reliable. The explanation is that all the information available depends on the subjective judgment of medical men, and that a diagnosis cannot always be made with absolute certainty, even with the assistance of all the most modern facilities; in the case of death even without autopsy. Moreover, it is often difficult to determine what is the actual and primary cause of death as distinguished from secondary complications.

The greatest difficulties present themselves in the case of the morbidity statistics. A number of cases are not reported, partly because they are not brought to the notice of a medical man (especially in the country, where distances are great and where it is often difficult to get medical assistance), and partly because the doctors may occasionally forget to report a case occurring in their practice. It may, however, be taken for granted that this does not happen in the case of dangerous infectious diseases of infrequent occurrence in Denmark, such as variola, typhus exanthematicus and dysentery. The reports may also be relied on, if not quite to the same extent, in the case of febris typhoidea, diphtheria, scarlatina, influenza, pneumonia crouposa, and bronchopneumonia, and, to a somewhat smaller extent, in the case of bronchitis, catarrh of the intestinalis acutus and angina tonsillaris, the notification of all of which is compulsory.

For ordinary statistical purposes, and for the application of the statistics to the country where they have been compiled, the consequences of such a state of things are, however, not very serious. It may be taken for granted that the number of errors will be approximately the same every year, so that changes in the figures give a fairly exact picture of the variations in the public health of the country. But when the statistics are used for comparisons between different countries the possibility of error becomes much more serious, and no real comparison is possible without detailed knowledge of the methods followed, the degree of certainty with which cases of disease are notified, and the extent to which the diagnoses of the countries in question are equivalent.

Danish medical statistics are prepared by the National Board of Health. The latter is the highest medical authority of the country ; it is under the control of the Ministry of Justice and was established by the Central Sanitary Organisation Act of April 30th, 1909. Clause 8 of this Act runs as follows : " The National Board of Health supervises and directs the collection and preparation of medical statistics and causes such statistics to be published ", the work being carried out by a Bureau of Medical Statistics under the control of the Board and under the direction of a medical man.

The material from which the medical statistics are prepared is the notifications and reports furnished by medical men and the death certificates which must be issued in every case of death. Both the notifications and the death certificates are sent in to the National Board of Health through the medical officers appointed according to the provisions of the Medical Officers Act of April 21st, 1914. The Board may, however, order notifications to be sent in directly — a provision which is due less to statistical than to sanitary considerations, more especially the desire to watch the development of epidemics.

Of medical officers there are in the whole country (exclusive of the Farøe Islands) a Chief City Medical Officer of Health (*Stadslæge*) of the metropolis (*Stadslægen i København*) and eighty District Medical Officers (*Kredslæger*), of whom twenty-five are County Medical Officers (*Amtslæger*). Reports are sent in to the District Medical Officers by the practising doctors once a week, as provided by instructions issued by the National Board of Health (*Sundhedsstyrelsen*) on December 30th, 1915, the former furnishing the Board with a monthly list of cases notified. The remaining reports and the death certificates are sent by the District Medical Officers to the County Medical Officers, who supplement them with the notifications and death certificates from their own district and forward the whole to the National Board of Health.

It has already been mentioned that Danish medical statistics comprise statistics of disease and statistics relating to causes of death. An account of each of these branches of statistics is given in the following :

I. — *Morbidity statistics* are prepared from the weekly lists of cases furnished to the District Medical Officers—in Copenhagen, to the Chief City Medical Officer of Health (*Stadslæge*) — by the practising physicians, in accordance with the instructions mentioned above. Outside the metropolis, all physicians, practising both in towns and in the country, must furnish one list of the cases occurring in their practice in town and a separate list of the cases occurring in their practice in the country. Physicians practising in more than one district must furnish a list to each District Medical Officer

within whose district they practise. While the doctors of the metropolis send weekly lists only, the physicians outside Copenhagen must furnish a separate list the remaining days of a month, and for the first days of the next month the beginning of a new month does not coincide with the end of a week.

The Chief City Medical Officer of Health (Stadslæge) in Copenhagen prepares a weekly bulletin from the weekly lists furnished by the physicians. This bulletin is published under the name of the "Weekly Report of Births, Deaths, and Diseases occurring in the City of Copenhagen" (*Ugentlig Oversigt over Foedsler, Sygdomme og Dødsfald i Koebenhavn*), and is sent to the National Board of Health and to all the physicians in Copenhagen. From the weekly lists furnished to them by the physicians, the District Medical Officers prepare one monthly bulletin for each town and one for all the parishes within their district. These bulletins are sent in to the National Board of Health, which prepares a general report, under the title of "Table of Diseases occurring in the Kingdom of Denmark" (*Skematisk Sygeliste for Kongeriget Danmark i... Maaned*), on the basis of all the bulletins (4 or 5 from Copenhagen, 86 from the towns, and 77 from the rural districts). The general report of the National Board of Health includes all the cases of disease reported from all parts of the country, grouped according to counties. Another table shows the cases occurring outside Copenhagen and the Farøe Islands grouped according to age, and, as far as adults are concerned, according to sex. The groups under which the ages of the patients are given are as follows: (a) under 1, (b) 1 to 5, (c) 5 to 15, (d) 15 to 65, (e) over 65 years. Finally the report contains a list showing the occurrence of the principal epidemic diseases in the individual districts outside Copenhagen and the Farøe Islands.

The diseases subject to compulsory notification have been practically the same since the 'sixties, and it is accordingly possible, with some exceptions, to trace the occurrence of individual diseases throughout about sixty years. The diseases the occurrence of which must at the present moment be notified are:

- | | |
|--|---|
| 1. Febris typhoidea, | 16. Tracheobronchitis, |
| 2. Meningitis cerebrospinalis epidemica, | 17. Bronchopneumonia and bronchitis capillaris, |
| 3. Diphtheria (and croup), | 18. Influenza, |
| 4. Scarlatina, | 19. Angina tonsillaris, |
| 5. Morbilli, | 20. Cholera and catarrhus intestini acutus, |
| 6. Tussis convulsiva, | 21.) |
| 7. Angina parotidea, | 22.) Alii morbi epidemici. |
| 8. Erysipelas, | 23.) |
| 9. Febris puerperalis, | 24. Gonorrhoea, |
| 10. Tetanus (and trismus) neonatorum, | 25. Ulcus venereum, |
| 11. Pemphigus neonatorum, | 26. Syphilis acquisita (e coitu importata), |
| 12. Febris intermittens, | 27. Syphilis acquisita (insons). |
| 13. Febris rheumatica, | 28. Syphilis congenita, |
| 14. Pneumonia crouposa, | 29. Scabies, |
| 15. Tuberculosis pulmonum et laryngis. | 30. Delirium tremens. |

As will have appeared from the introductory remarks, the figures for these diseases must in general be looked upon less as the actual than as the minimum figures. The "Table of Diseases" states that a number of physicians have sent in no weekly

at all, it must, however, be borne in mind that this omission is often due to the fact that physicians have had no cases of diseases subject to notification within their practice during the week in question. For some diseases, on the other hand, the figures are too high. This especially applies to syphilis, which is often reported twice or more; in cases of recrudescence, or if the patient consults another physician who is ignorant of the fact that the case has already been reported once. The same applies to consumption.

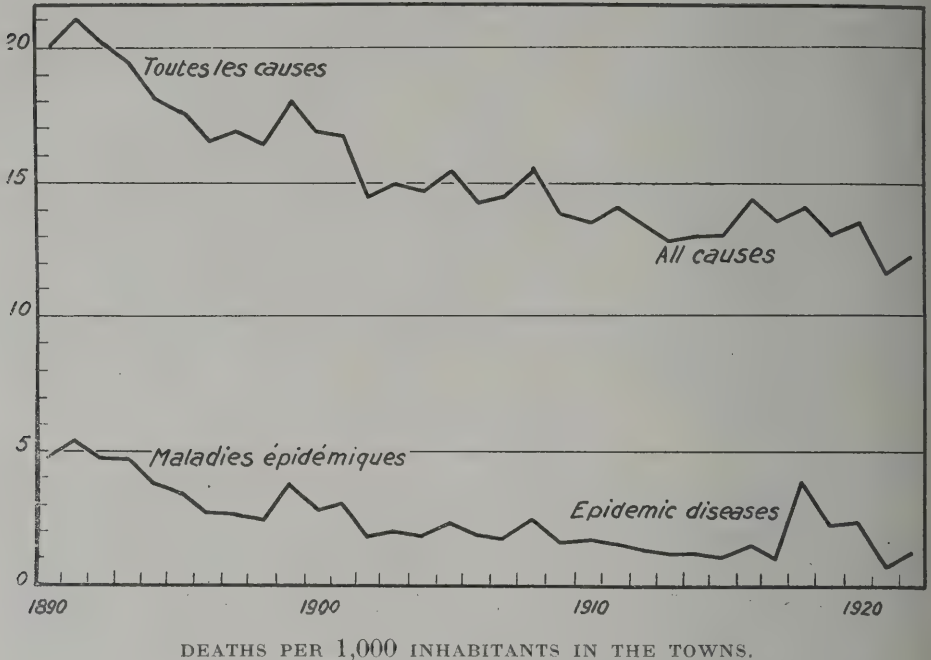
At the end of each year every District Medical Officer must, moreover, prepare an annual report for each town and one for all the rural parishes of his district, on the basis of the monthly reports. These annual reports are forwarded to the County Medical Officer, who prepares from them one report for all the towns and one for all the rural parishes of his county. These reports are forwarded to the National Board of Health, which in its turn uses them for the preparation of the annual *Medical Report to the Kingdom of Denmark*, which contains the ordinary morbidity statistics and hospital statistics. These comprise the number of beds, the number of patients treated, the occurrence of certain diseases, especially of an epidemical character. The poorer are treated gratuitously, according to the Infectious Diseases Act of May 10th, 1855, if the patient is taken to a hospital directly after the disease has been found out, the object of the statistics being to ascertain to what extent this right of gratuitous treatment is used. Besides, the *Medical Report* contains various statistical information about hospitals and similar institutions for the treatment of consumptives, lunatics, epileptics, etc., and statistical information about the staff of the Public Health Service, vaccination, disinfection, and the inspection of foodstuffs, and special statistics relating to consumption.

II. — *The statistics dealing with causes of death* are prepared on the basis of the death certificates which must be issued in every case of death, after an inquest has been held. In the towns, all death certificates must be issued by an authorised physician. In rural districts, this is only the case if the distance from the place of residence of the deceased to the nearest doctor is less than two kilometres. If the distance exceeds two kilometres, a death certificate may be issued by the functionaries called *Ligsynsmaend*, but all certificates issued by the latter must be submitted for verification, by the District Medical Officer, to the physician who has treated the deceased, in order that the cause of death may be properly ascertained. In Copenhagen, the death certificate is handed over to the relatives of the deceased, who, having shown it to the clergyman who performs the funeral ceremony, forward it to the Municipal Burial Office (*Begravelseskontoret*), which in its turn forwards the death certificates to the Chief City Medical Officer of Health (*Stadslaege*) once a week. Outside Copenhagen, the certificates are handed in to the vicar of the parish, who, once a month, sends them to the District Medical Officer, who in his turn forwards them to the National Board of Health through the County Medical Officer.

The Chief City Medical Officer of Health (*Stadslaege*) of the City of Copenhagen every year prepares a table of mortality, the death certificates of persons domiciled inside the city having previously been separated from the other certificates and forwarded to the National Board of Health, which in its turn forwards to the Chief City Medical Officer of Health (*Stadslaege*) the death certificates of all persons domiciled

in Copenhagen who have died outside the city. *All death certificates are thus registered according to the place of residence and not to the place of death.*

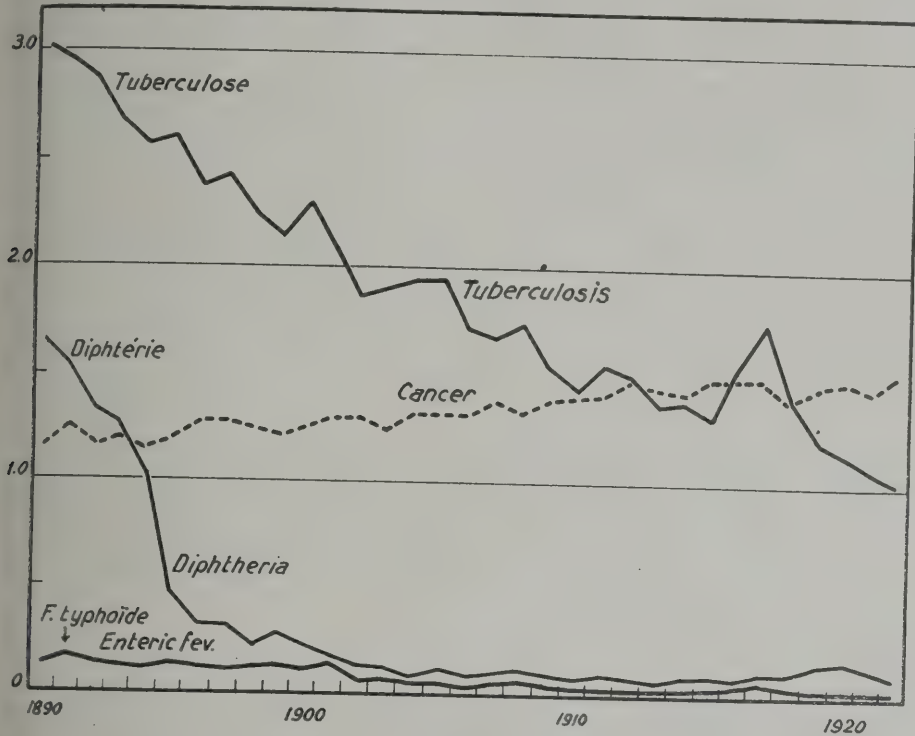
From the table of mortality compiled by the Chief and from the death certificates forwarded by the County Medical Officers, the National Health Committee every year prepares a publication entitled *Causes of Death in the Kingdom of Denmark* (*Doedsaarsagerne i Kongeriget Danmark*), which includes the Farøe Islands. In *Medical Report* these islands are also included, but in that publication they are, well as Greenland, made the subject of a separate section.



All things considered, the statistics relating to the causes of death may be said to be as reliable as it is possible to make them, even though erroneous diagnoses are not of course, precluded, and even if it is, in many cases, difficult to determine under what head a case ought to be entered. The most obvious shortcoming is the fact that death certificates issued by the *Ligsynsmaend* cannot be verified if the deceased has not been under medical treatment, so that such cases must be entered as "*mors sine nota causa*". It would be a very desirable reform if all death certificates were issued by medical men. This is solely a question of cost. However, the number of certificates issued by *Ligsynsmaend* is on the decrease, owing to the fact that an increasing number of medical men are settling in the rural parishes. While, in 1904, only 42 per cent of the death certificates in rural districts were issued by medical men, the percentage has increased to 73 in 1922. Another drawback of the present system is the fact that the death certificates are handed over to the relatives of the deceased open

which constitutes a temptation to the physicians not to state such causes of death as they wish to keep from the latter, *e.g.*, alcoholism or syphilis.

Stillborn children are not included in the statistics relating to causes of death and are entered on a separate list. The *Medical Report* likewise distinguishes between children born alive and stillborn children. In contradistinction to what is the case in several other countries, in which children dying within a specified period after birth are counted as stillborn, in Denmark all children who have shown signs of life are entered as being born alive, even if they have only survived for a few minutes. This even applies to children born before the end of the twenty-eighth week of the period of gestation, a fact which makes it impossible to compare the rate of infant mortality in Denmark with that of other countries without previous knowledge of the definition of the term "stillborn" in the countries in question.



DEATHS PER 1,000 INHABITANTS IN THE TOWNS.

The nomenclature used has been the same since 1876, when the causes of death in towns were first made the subject of statistical treatment, and it is accordingly somewhat obsolete in several respects. Thus, meningitis cerebrospinalis epidemica and erythema infectiosum are not entered separately but under the heading of "morbi epidemici". On the other hand, the tables contain headings for diseases which practically never occur at the present time, and which might more conveniently be entered under some collective heading, such as febris intermitiens. Nor is the placenta previa among the diseases of the nervous system instead of among infectious diseases in accordance with modern scientific ideas. On the other hand, the unbroken continuity of the system has the advantage that it renders possible comparisons between

the fluctuations of the individual causes of death in the towns through a period almost fifty years.

Comparisons with other countries are, however, difficult. In order to facilitate such comparisons, the publication entitled *Causes of Death in the Kingdom of Denmark* has, since 1920, placed the corresponding number of the international nomenclature against each number of the Danish tables. But only about half of the Danish numbers actually correspond to a separate number of the international nomenclature, the remaining Danish numbers cover only part of an international number or have been distributed over several numbers.

In the large tables, of which there are five (for Copenhagen, Frederiksberg, and the remaining towns, the country districts, and the total for the whole of the country), the causes of death are grouped under 113 heads. These are subdivided according to age (under 1 month, 2 to 3 months, 4 to 12 months, a group for each year from 1 to 4 years, a group for each 5 years from 5 to 25, a group for each 10 years from 25 to 85, and one group for persons over 85). Within each group the deaths are classed according to sex.

Among the other tables contained in the *Causes of Death* may be mentioned tables showing the incidence of deaths in town and country districts respectively, and in the months of the year, and various tables containing comparisons with figures for the preceding years.

In addition to this annual survey, which consists exclusively of statistical tables, the National Board of Health every ten years publishes a general conspectus for the past decade. This publication contains an introduction to the tables, consisting of an examination of the relative importance and the fluctuations of the individual causes of death from year to year, and from decade to decade.

To go through every single item of the medical statistics would be impossible, but in the following an attempt is made to give an account of some significant facts which may throw some light on the developments of the last thirty-three years, stressing being laid on the statistics dealing with the causes of death, which must be based upon as more reliable than the statistics of disease. From 1921, the districts of Schleswig formerly in German possession are included.

The population of Denmark numbered at the census of :

February 1st, 1890	...	2,172,380, of which	722,244 in towns.
» 1901	...	2,449,540, »	958,905 »
» 1906	...	2,588,919, »	1,023,334 »
» 1911	...	2,757,076, »	1,109,726 »
» 1916	...	2,921,362, »	1,209,975 »
» 1921	...	3,267,831, »	1,410,831 »

The Farøe Islands are not included in these figures, as also they are excluded from all the following calculations. On the other hand, in the census of 1921 the population of the provinces of South Jutland, regained from Germany, is included.

The fact that the Farøes are not included in the calculations is due to the fact that the death certificates not having been subject to statistical treatment till the year 1921, and reports from Greenland are so uncertain that they do not lend themselves to statistical treatment either.

The population of the Farøes, which constitute a county of Denmark, and that of the Greenland colony numbered :

The Farøes.			Greenland.		
February 1st, 1890	...	11,220	October 1st, 1890	...	10,516
» 1901	...	15,230	» 1901	...	11,893
» 1906	...	16,348			
» 1911	...	18,000	» 1911	...	13,459
» 1916	...	19,617			
» 1921	...	21,352	» 1921	...	14,355

From Table I it will be seen that the rate of mortality for all the towns has decreased from 196 per 10,000 inhabitants for each year of the period 1890-94 to 122 per 10,000 in 1922, a decline of 38 per cent, while the decline in country districts was from 184 to 117 per 10,000, or 36 per cent. In 1921, the rate of mortality was still higher, being, according to the *Annuaire Statistique* 1922 (*Statistique générale de la France*), lower than that of any other European country. In 1922, however, the death-rate of the Netherlands was slightly lower, viz., 115 per 10,000, while the rate of mortality for the whole of Denmark was 119 per 10,000.

During the same period, infant mortality in the towns declined from 1,702 to 845 per 10,000 children born alive, or 50 per cent. In this case, too, there has been a decrease of the death-rate in 1922. In country districts, the rate of infant mortality fell, during the period under review, from 1,211 to 845, i.e., a decline of 30 per cent, the year 1922 showing a slight rise. The decline in the rate of infant mortality was thus considerably less pronounced in the country than in the towns. Whereas a few years ago the rate of infant mortality was about 50 per cent higher in the towns than in the country, it is now approximately the same for the urban and rural population. While the rate of infant mortality of the towns decreased by 50 per cent, i.e., to a considerably greater rate than the total mortality, which declined by 38 per cent, the opposite was the case in the country districts; here the rate of infant mortality decreased by 30 per cent, while the total death-rate declined by 36 per cent. Among the individual diseases the following may be mentioned :

1. *Febris typhoidea* (including *febris paratyphoidea*, *febris continua*, and *febris intermittens*), of which an average of 17 cases per 10,000 inhabitants was reported for each year of the period 1890-94, has constantly been on the decline since that time, only 0.1 case per 10,000 inhabitants being reported in 1922. The decline is thus about 99 per cent. In 1922, still fewer cases were reported in 105 large towns of England and Wales and in Switzerland (*Epidemiological Intelligence*, No. 7, published by the Health Section of the League of Nations in 1923, but this work contains no information as to France is concerned).

As far as deaths are concerned, these amounted to 1.5 per 10,000 inhabitants in the towns during the period 1890-94. In 1922, the figures were 0.1 per 10,000, a decline of 93 per cent. From the country districts, the only period for which information is available is that of 1920-22; during this period the rate of mortality in these districts was somewhat lower than in the towns. Altogether, the Danish rate of mortality as far as this disease is concerned, was in 1922 lower than that of any European country of which information is given in the *Epidemiological Intelligence*.

2. *Diphtheria and croup*, of which an annual average of 97 cases per 10,000 inhabitants was reported during the period 1890-94, decreased during the following years, only 19 cases per 10,000 inhabitants being reported during the five-year period of 1905-09. During the two following periods of five years, the disease was somewhat on the increase, but it was not till 1919 that the disease began to gain headway, about 40 cases per 10,000 being reported in that year. In 1920, the figure rose to 43.7 per 10,000, but in 1921 they again decreased a little, and in 1922 the rate was as low as 23.8 per 10,000 inhabitants. Altogether, there is thus a decrease of 75 per cent from the period of 1890-94 to 1922. This last epidemic lasted only about two years, while the one before lasted from the middle of the 'eighties to the middle of the 'nineties. The reason for the short duration of the last epidemic is probably that segregation in hospitals is now much more extensively resorted to than in 1890. The first modern statute dealing with precautions to be taken against infectious diseases — the Infectious Diseases Act of April 20th, 1888 — provided for gratuitous treatment only in exceptional cases, while the Act of March 31st, 1900, provided for gratuitous treatment in every case of diphtheria, so that, during 1922, 88 per cent of the cases reported were treated in hospitals.

The rate of mortality for this disease, which in the period of 1890-94 in the towns amounted to an average of 13.7 per 10,000 inhabitants, declined to 0.8 per 10,000 in the period 1910-14. It subsequently rose somewhat, culminating in 1920 with 1.5 per 10,000 and fell again to 0.8 in 1922. The decline in the towns from the period of 1890-94 to 1922 was very considerable, amounting to 94 per cent. Already from the period of 1890-94 to the period of 1895-99, there was a very marked decline in the rate of mortality, due to the fact that the epidemic was becoming less virulent towards the end. Serum treatment had not yet become prevalent enough to make itself felt. This was, however, the case during the epidemic of 1919-21, during which the hospitals used great quantities of serum — as much as 200,000 units. In the country districts the rate of mortality during the three years 1920-22 was somewhat higher than in the towns.

In spite of the great decline both in the number of cases reported and in the number of deaths, Denmark was still, in 1922, according to *Epidemiological Intelligence*, the European country with the greatest number of cases in proportion to the population, whereas both 105 cities of England and Wales, and Scotland and Ireland had a greater rate of mortality.

The relatively large number of cases reported may perhaps to some extent be due to the reports being sent in more regularly than in other countries, but, as the mortality is also relatively high compared with that of other countries, it can hardly be due to that the disease has been very widespread. In the two preceding years the rate has likewise, according to the *Annuaire statistique*, been very prevalent compared with what was the case in other European countries.

3. Of *scarlatina*, which, like diphtheria, must be said to be endemic in Denmark, an average of 31.6 cases per 10,000 inhabitants was reported during the period 1890-94. In the following years the figures fluctuated, rising to 39.8 per 10,000 inhabitants in 1920, and falling to 15.4 per 10,000 inhabitants in 1922.

The mortality, which in the period of 1890-94 was 2.1 per 10,000 inhabitants in the towns, had decreased to 0.3 by 1922, the decline being 86 per cent. This cannot be due to improved therapeutics, but must rather be ascribed to the increase in the number of cases reported.

valence of hospital treatment. The first to contract the disease in a given household is generally a child attending school, and, if it is taken to the hospital immediately, the younger children of the household avoid getting infected and do not catch the disease till they begin to go to school, i.e., at an age when they have more powers of resistance. In the country, the rate of mortality in 1920 was 0.3, while in 1922 it was 0.1 per 10,000 inhabitants.

Of this disease, too, a relatively large number of cases has been reported in Denmark during 1922, England and Wales being the only countries that have a large number of cases in proportion to their total population. Nevertheless, the rate of mortality in Denmark was low, being less than that of all other countries with the exception of Rumania, Austria, Danzig, the Netherlands and Norway (towns only).

By rights, the basis of comparison in the case of these two last-mentioned diseases, as regards mortality and frequency of occurrence, ought to be the number of children rather than the total population, but the materials for such an estimate are not available.

4. *Febris puerperalis* must be considered a very good indicator of the efficiency of the midwives and of their knowledge of antiseptics and aseptics. That an improvement has taken place during the period under review appears from Table III, which shows that, during the period of 1890-94, an annual average of 93 cases per 10,000 births were reported (the figures are somewhat in excess of the actual number of women delivered, as the birth of twins is counted as two, a fact which does not, however, affect the figures to any appreciable extent). The figures steadily decreased, amounting to an annual average of only 36.6 per 10,000 births in the period of 1915-19. After a slight increase in 1920 and 1921, they again fell to 34.1 per 10,000 births in 1922, the total decline during the period under review being thus 36 per cent.

The rate of mortality in the towns fell from an annual average of 26.1 per 10,000 deaths in the period of 1890-94 to 12.0 in 1922, a decline of 59 per cent. During the preceding years, the figures were even somewhat lower than in 1922. In the country, the rate of mortality was in 1920 and 1921 somewhat higher than in the towns in proportion to the number of births, but in 1922 it was considerably lower.

5. *Cholerae and catarrhus intestinalis acutus*, the occurrence of which is largely dependent on the climatic condition of each year, the disease being of considerably more frequent occurrence in warm and dry than in cold and rainy summers, have declined in a marked degree, both as regards the number of cases notified and the number of deaths, a fact which is, no doubt, due to improved sanitation.

In the period 1890-94, an average annual number of 150.4 cases per 10,000 inhabitants was reported. Increasing somewhat during the following period of five years, the figures again declined steadily, till in 1922 they were 66.8 per 10,000 inhabitants, a total decline of 56 per cent.

The rate of mortality in the towns showed a still greater reduction, viz., from an annual average of 11.6 per 10,000 inhabitants in the period 1890-94 to 1.9 per 10,000 in 1922, a decline of 84 per cent. In the country, the rate of mortality in 1920-22 was approximately the same as that of the towns.

This marked decline in the rate of mortality for these diseases affects the rate of infant mortality to a considerable extent, a relatively large number of deaths among infants having always been due to them. Among children under one year of age an average annual number of 1,026 cases per 10,000 children born alive was reported during the period of 1890-94. These figures remained approximately the same until anything slightly higher, till the period of 1910-14. In the following years, there was a steady decline, only 678 cases per 10,000 children born alive being reported in 1922. Nevertheless, the decline during the whole period under review was only 34 per cent, *i.e.*, considerably less than the decline in the occurrence of cholera for persons of all ages.

The decline in the rate of infant mortality in the towns was considerably greater. In the period 1890-94, the latter was on an average 327.9 per 10,000 children born alive, but, after an increase which took place during the following five years, it again fell steadily, till it reached 75.9 per 10,000 in 1922, a reduction of 77 per cent since the period 1890-94, so that the decline in the rate of mortality during the first year of life — as was also the case as regards the decline in the frequency with which the disease occurred — was less for infants than for persons of all ages.

It has already been pointed out that the decline in the number of deaths caused by cholera greatly affects the general rate of infant mortality. From Table I it will be seen that in the towns the number of deaths during the first year of life fell from 3,968 per year during the period 1890-94 to 2,505 in 1922, *i.e.*, the number was reduced by 1,463 born alive. Of this total reduction of 1,463, 535 (or a little more than one-third) were due to the decline of the number of deaths caused by cholera, *catarrhus intestinalis acutus*, while two-thirds were due to a decline in the number of deaths resulting from all other causes. Whereas deaths caused by cholera during the first year of life amounted to 19.2 per cent of the total number of deaths during the first year of life in the period 1890-94, they amounted to only 9.1 per cent of such deaths in 1922.

The very considerable decline in the number of deaths caused by cholera among infants in the towns is due partly to the more efficient milk inspection, partly to the fact that it has become more usual for mothers to nurse their own children. The latter fact must be ascribed to the increasing realisation of the importance of nursing and the assistance which is, in various forms, accorded to women who nurse their own children. Thus, the Factories Act of April 29th, 1913, provides that, with certain exceptions, no woman worker may resume work in a factory till four weeks after her delivery and that such women are to receive relief from the public funds without incurring any of the civil disabilities otherwise entailed by the acceptance of poor-relief.

In the country districts, the rate of mortality during the first year of life was in 1920-22 approximately the same as in the towns.

6. *Alcoholism*, though otherwise of no very great significance, is still a disease of some importance from a social point of view. Of the diseases caused by alcohol, delirium tremens is the only one subject to compulsory notification. The annual occurrence of this disease was almost the same throughout the period 1909, the number of cases reported varying from 4.0 to 4.3 per 10,000 inhabitants. In the period 1910-14 the figures decreased to 3.3 per annum per 10,000 inhabitants. Having increased somewhat during the first years of the Great War, the cases suddenly fell from 781 in 1916 to 250 in 1917, as a result of the prohibition of the

of spirits in force from February 27th to March 26th, 1917, and the subsequent rise in the price of spirits caused by the introduction of new taxation. In the following years, the figures remained very low, and even fell to a still lower level, only 43 cases being reported in 1922, *i.e.*, 0.1 per 10,000 inhabitants. The decline from the period 1890-94 to 1922 was thus 98 per cent.

The rate of mortality as far as alcoholism (*alcoholismus chronicus*, *delirium tremens*, and *mors in ebrietate*) is concerned fell in the towns from 1.9 per 10,000 inhabitants in 1890-94 to 0.3 in 1922, a decline of 84 per cent. It must, however, be borne in mind that the death certificates are handed open to the relatives of the deceased, and that it is therefore highly probable that the physicians who issue the certificates frequently do not state that the cause of death, *e.g.* *cirrhosis hepatis*, is really the result of chronic alcoholism. The figures shown by the tables are therefore undoubtedly too low. In the country, deaths caused by alcoholism during the period 1920-22 were of a rarer occurrence than in the towns.

7. *Morbi venerei*. The notification of these diseases is very defective: a number of cases are never subject to medical treatment at all, and other cases are notified only, or even more than that; this especially applies to syphilis, which is often notified only over in cases of recrudescence. Nevertheless, the notification of the cases is not without a certain regularity. Table V shows that the annual average number of cases reported during the period 1890-94 was 33.3 per 10,000 inhabitants. The number rose steadily till it reached 48.2 cases per 10,000 in 1910-14. During the Great War there was a considerable increase, an annual average of 57.3 cases per 10,000 inhabitants being reported during the period 1915-19, but after 1919 there was a decline, and in 1922 the number of cases reported was only 40.9 per 10,000. The cases reported include gonorrhœa, *ulcus venereum* (*molle*), and syphilis, the latter constituting between one-third and one-fourth of the total number of cases notified.

The only one of these diseases of any importance as a cause of death is syphilis, but as a cause of death even this disease is insignificant. The rate of mortality from syphilis (*acquisita et congenita*) in the towns has remained at the same figure (0.6 per 10,000 inhabitants) since 1890-94. Slight changes were recorded in 1900-04, when it was 0.7, and in 1915-19, when it was 0.5 per 10,000 inhabitants. In the country the rate of mortality was 0.2 in 1920 per 10,000 inhabitants, and 0.1 in 1921 and 1922. It must, however, be remarked that the post-syphilitic diseases *aneurysma aortæ*, *osteomyelitis dorsalis*, and *dementia paretica* are not entered among these causes of death.

8. *Tuberculosis*. The only one of the tuberculous diseases subject to compulsory notification is *tuberculosis pulmonum*. As must necessarily be the case with chronic diseases, the reports are, however, extremely unreliable. An attempt has been made to introduce personal notification of the individual cases as from 1906, when the Act for the Combating of Tuberculosis came into force, but for various reasons the preparation of the material thus collected had to be abandoned, and it is only since 1920 that the task has been resumed as regards the material collected since January 1, 1920. It is hardly possible to arrive at completely reliable results on the basis of these notifications — in the first place, because a number of cases are not notified, and in the second place, because it will be difficult to strike off from the card index all those who have recovered, or who have left their former place of residence, or who died from other causes than tuberculosis. It is not yet possible to arrive at

a definite conclusion as to the number of persons suffering from pulmonary tuberculosis, but the number may be provisionally estimated at between 22,000 and 26,000 between 67 and 79 per 10,000 inhabitants.

The rate of mortality for tuberculosis is steadily on the decline. For all various forms of tuberculosis the mortality in the towns was, on an average, 28.2 per 10,000 inhabitants for each year of the period 1890-94 ; in 1922, it was 10.4 per 10,000. The decline was thus 63 per cent. This decline would probably have been still more pronounced but for the difficulties in procuring an adequate supply of drugs during the Great War, and the influenza epidemic, which between them caused the number of cases to remain almost stationary in 1915-19. In the country, the rate of mortality in 1920-22 was a little lower than in the towns.

The mortality of pulmonary tuberculosis in the towns fell from 20.8 per 10,000 inhabitants in 1890-94 to 8.0 per 10,000 in 1922, the decline being thus 62 per cent, a little less than that shown by the mortality for all the tuberculous diseases. In the country, too, the five years 1915-19 show no decline. In the country, the mortality in 1920-22 was somewhat less than in the towns.

9. *Cancer*, under which heading all malignant tumours are included, is the one of the diseases of which an account is given here which is on the increase. Notification is not compulsory during the lifetime of the patient, and the deaths are accordingly the only data available for statistical purposes. These increased in the towns from an annual average of 11.7 per 10,000 inhabitants during the period 1895-1900 to 15.2 in 1922, the increase being thus 30 per cent.

This increase of the figures does not, however, denote a corresponding increase in the actual cases, being partly due to improved diagnoses, which in this respect particularly must be ascribed to the fact that hospital treatment is becoming more frequent. Moreover, the increasing average length of life also affects the statistics. In the period 1895-1900, the average length of life was, according to the *Danish Book of Statistics (Statistisk Aarbog)* for 1923, 50.2 years for new-born boys and 48.2 years for the new-born girls ; in 1911-15 the figures had increased to 56.2 years for boys and 59.2 years for girls. It is, then, obvious that an increasing number of persons attain the age at which malignant tumours are most fatal, i.e., the age from 65 to 75.

There is no reason to enter at any length into the *lethality* of the various diseases, i.e., the proportion of the number of deaths caused by each disease to the total number of occurrences of that disease. The lethality is not subject to very important variations from one year to another. In the annual *Medical Report*, it is stated for the diseases subject to compulsory notification.

It remains to examine the incidence of the total number of deaths from the various diseases. A glance at the twenty groups in which the causes of death are placed

e VII will show that some very important modifications have taken place in this fact, among which may be mentioned the following :

The *epidemic diseases*, which in 1890-99 were the most frequent causes of death, which in that period caused 20.5 per cent of all the deaths, receded in the periods 1900-09 and 1910-19 to the second, and in 1920-22 to the third place, having caused, in the last period, only 10.8 per cent of the total number of deaths. The explanation of this development is improved sanitation, private and public, and the prevalence of segregation in hospitals. But for the influenza epidemics of 1918-19, 1920, and 1922, the part played by these diseases would have been of still less significance.

Tuberculosis, which in 1890-99 was the most frequent cause of death but one, having caused 14.0 per cent of all deaths, caused only 12.4 per cent in 1900-09, 10.6 per cent in 1910-14, and 8.8 per cent in 1920-22, having receded to the seventh place. Here, the improvement is due to improved sanitation in connection with the preventive measures as regards the segregation and treatment of tuberculous patients introduced by the two Acts of March 12th, 1918, and June 30th, 1919. (The first Act for the Compulsory Notification of Tuberculosis was passed in 1893.)

Cancer was in 1890-99 fifth, causing 6.6 per cent of all deaths. In 1900-09 it caused 8.7 per cent, and in 1910-19 10.9 per cent. In 1920-22, it had become second, having caused 12.0 per cent of all deaths. The increase shown by these figures is, as pointed out above, due to improved diagnoses and to the increase of the average length of life.

Another disease showing a considerable increase is *marasmus senilis*, which in 1890-99 caused only 4.4 per cent, while in 1920-22 it caused 10.1 per cent of all the deaths. *The diseases of the organs of circulation* also show a marked increase : from 7.3 per cent to 10.7 per cent, the figures for both these groups being, however, affected by the increasing average length of life.

The group of diseases occupying the first place is that comprising the *diseases of the respiratory organs*. These have remained practically stationary all through the period under review, varying between 13.3 and 14.0 per cent.

Pneumonia and *tuberculosis* show some increase, viz., from 4.2 per cent in 1890-99 to 5.4 per cent in 1920-22. The fact that *atrophia infantilis* has, during the same period, decreased from 3.5 per cent to 0.5 per cent seems, however, to show that the explanation of this decrease is the fact that a number of diseases which were formerly looked upon as congenital are now entered under the congenital diseases.

The *diseases of the organs of digestion* have remained fairly stationary, varying between 4.0 and 4.6 per cent. *Deaths caused by accident* varied between 1.7 and 2.1 per cent, and *suicide* between 1.3 and 1.6 per cent. *Syphilis* varied between 0.2 and 0.5 per cent, and *mors in puerperio* (exclusive of febris puerperalis), which constitutes the smallest group, between 0.1 and 0.2 per cent.

All things considered, these figures are, however, of less interest than the relation of the rate of mortality to the total population. That the incidence of deaths on individual disease increases does not necessarily mean that the disease in question has actually become of more frequent occurrence : it may also be due to a relative decrease of other causes of death, and vice versa. From 1890-99 to 1920-22, eight groups of diseases show an aggregate decline of 20.7 per cent, which, if distributed evenly on the remaining twelve groups, would result in an increase of about 2 per cent for each of the latter. Considerably greater modifications have taken place as regards cancer, morbi organorum circulationis and marasmus senilis, which accords very well with the fact that those diseases which have declined most (morbi epidemici, tuberculosis, and atrophía infantilis) are confined to children or younger people.

Of the statistical information which, in addition to the above, is contained in the *Medical Report*, the following may be mentioned in passing.

The number of *practising physicians* in 1910 was about 1,600, *i.e.*, about one physician for every 1,700 inhabitants. In 1920, the number had increased to 2,000, *i.e.*, about one for each 1,600 inhabitants.

The number of *dentists* increased during the same period from about 350 to about 500, or from one dentist for each 7,600 inhabitants to one for each 6,300 inhabitants.

The number of *authorised drugstores* increased from 251 in 1910 to 303 in 1921, *i.e.*, one for each 10,800 inhabitants in both years.

The number of *midwives* only increased from about 1,000 (*i.e.*, one for each 2,000 inhabitants) in 1910 to about 1,100 (*i.e.*, one for each 3,100 inhabitants) in 1921. However, the number of births relatively decreased during the same time (from 28 to 24 children born alive per 1,000 of the population), the midwives had about 77 births each in 1910, but only about 73 each in 1921.

The number of hospital beds for ordinary medical and surgical, epidemic and venereal diseases was about 10,600 in 1910, or 39 per 10,000 inhabitants. In 1921 the number had increased to 14,100, or 43 per 10,000 inhabitants. Increasing use was also made of the hospitals : in 1910, 30 *pro mille* and in 1921 44 *pro mille* of the population received hospital treatment. Of the total number of beds, about 33 per cent were vacant daily in 1910, whilst in 1921 the percentage had decreased to about 25. The number of beds for epidemical diseases was about one for each 1,000 inhabitants all through the period under review.

The number of beds at the sanatoria and similar institutions for the treatment of tuberculosis, which in 1911 was 2,520, increased to 3,322 in 1921 ; in both years the number was equivalent to about one bed per 1,000 inhabitants.

Table I.

RATE OF MORTALITY IN DENMARK.

(exclusive of the Farøe Islands.)

Per annum in	All deaths				Deaths in the first year of life			
	Towns		Country		Towns		Country	
	Number of deaths	Per 10,000 inhabi- tants	Number of deaths	Per 10,000 inhabi- tants	Number of deaths	Per 10,000 born alive	Number of deaths	Per 10,000 born alive
90-1894	15,195	196	26,486	184	3,968	1,702	5,467	1,211
95-1899	13,994	170	24,334	160	4,145	1,663	5,568	1,252
00-1904	14,758	155	22,954	150	4,040	1,443	4,754	1,075
05-1909	15,357	147	21,907	138	3,762	1,297	4,564	995
10-1914	15,111	134	20,973	126	3,047	1,092	4,195	910
15-1919	16,988	136	21,889	127	2,699	974	3,711	863
1920	17,910	135	21,964	125	3,006	939	4,057	878
1921	15,881	114	20,416	108	2,366	742	3,684	786
1922	17,115	122	22,346	117	2,505	856	3,773	845

Table II.

FEBRIS TYPHOIDEA¹ AND DIPHTHERIA AND CROUP.

Per annum in	Febris typhoidea ¹						Diphtheria and Croup					
	Cases reported from the whole of the country		Deaths				Cases reported from the whole of the country		Deaths			
			Towns		Country				Towns		Country	
	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total number	Per 10,000 inhabi- tants	Total number	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants
1890-1894	3,834	17	110	1.5	—	—	21,523	97	1,030	13.7	—	—
1895-1899	2,256	10	100	1.2	—	—	10,180	44	279	3.3	—	—
1900-1904	1,446	6	73	0.8	—	—	6,069	22	146	1.5	—	—
1905-1909	858	3	45	0.4	—	—	4,845	19	111	1.1	—	—
1910-1914	527	2	23	0.2	—	—	5,649	21.4	90	0.8	—	—
1915-1919	660	2.2	36	0.2	—	—	6,669	22.4	117	0.9	—	—
1920	430	1.4	26	0.2	10	0.1	13,567	43.7	204	1.5	341	—
1921	422	1.3	16	0.1	25	0.1	13,945	42.5	169	1.2	341	—
1922	477	1.4	15	0.1	18	0.09	7,929	23.8	109	0.8	238	—

¹ Including febris paratyphoidea.

Table III.

SCARLATINA AND FEBRIS PUERPERALIS.

Year num in	Scarlatina						Febris puerperalis					
	Cases reported from the whole of the country		Deaths				Cases reported from the whole of the country		Deaths			
			Towns		Country				Towns		Country	
	Total number	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total number	Per 10,000 births ¹	Total num- ber	Per 10,000 births ¹	Total num- ber	Per 10,000 births ¹
-1894	7,007	31.6	158	2.1	—	—	633	93.0	62	26.1	—	—
-1899	6,903	29.5	92	1.1	—	—	528	74.1	48	18.8	—	—
-1904	9,132	36.7	88	0.9	—	—	476	64.5	44	15.3	—	—
-1909	4,007	15.2	54	0.5	—	—	441	58.0	42	14.1	—	—
-1914	5,720	21.7	92	0.8	—	—	324	43.4	34	11.9	—	—
-1919	6,983	23.5	39	0.3	—	—	265	36.6	33	11.6	—	—
1920	12,285	39.8	69	0.5	61	0.3	330	41.2	36	11.0	69	14.6
1921	11,093	33.8	61	0.4	53	0.2	329	40.7	35	10.7	67	14.0
1922	5,109	15.4	39	0.3	24	0.1	258	34.1	36	12.0	34	7.4

¹This figure includes children born alive and still-born children, and is thus a little in excess of the number of children delivered.

Table IV.

CHOLERINE AND CATARRHUS INTESTINALIS ACUTUS.

Per annum in	Total						First year of life					
	Cases reported from the whole of the country		Deaths				Cases reported from the whole of the country		Deaths			
			Towns		Country				Towns		Country	
	Total number	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total number	Per 10,000 chil- dren born alive	Total num- ber	Per 10,000 chil- dren born alive	Total num- ber	Per 10,000 chil- dren born alive
1890-1894	33,270	150.4	872	11.6	—	—	6,818	1,026	764	327.9	—	—
1895-1899	36,167	154.6	1,043	12.6	—	—	8,332	1,200	937	376.2	—	—
1900-1904	35,579	142.9	944	9.7	—	—	7,908	1,098	853	302.5	—	—
1905-1909	34,129	125.7	928	8.9	—	—	8,146	1,101	836	288.3	—	—
1910-1914	32,931	124.1	695	6.2	—	—	8,439	1,142	609	218.3	—	—
1915-1919	29,914	100.5	360	2.8	—	—	6,221	881	292	105.8	—	—
1920	25,287	81.9	350	2.6	461	2.6	6,189	791	296	92.5	378	—
1921	25,571	77.8	352	2.5	509	2.6	6,356	806	291	91.2	432	—
1922	22,202	66.8	268	1.9	430	2.2	5,010	678	229	75.9	346	—

Table V.

ALCOHOLISM AND MORBI VENEREI.

Per num in	Alcoholism						Morbi venerei					
	Cases of delir. trem. reported from the whole of the country		Deaths resulting from alcoholism				Cases reported from the whole of the country		Deaths resulting from syphilis			
			Towns		Country				Towns		Country	
			Total number	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants			Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants
1894	891	4.0	146	1.9	—	—	7,369	33.3	46	0.6	—	—
1899	1,018	4.3	160	1.9	—	—	8,275	35.3	53	0.6	—	—
1904	1,007	4.1	181	1.9	—	—	9,712	39.0	64	0.7	—	—
1909	1,125	4.3	209	2.0	—	—	10,982	41.3	63	0.6	—	—
1914	862	3.3	171	1.5	—	—	12,693	48.2	72	0.6	—	—
1919	353	1.2	76	0.6	—	—	17,049	57.3	84	0.7	—	—
1920	56	0.2	36	0.3	24	0.1	17,059	55.3	67	0.5	27	0.2
1921	51	0.2	27	0.2	26	0.1	15,908	46.0	86	0.6	22	0.1
1922	43	0.1	37	0.3	30	0.1	13,596	40.9	81	0.6	29	0.1

Table VI.

DEATHS FROM :

Per annum in	Omnes morbi tubercul.				Tubercul. pulmonum				Cancer			
	Towns		Country		Towns		Country		Towns		Country	
	Total num- ber	per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants	Total num- ber	Per 10,000 inhabi- tants
1890-1894	2,106	28.2	—	—	1,566	20.8	—	—	881	11.7	—	—
1895-1899	1,947	23.4	—	—	1,439	17.3	—	—	1,027	12.3	—	—
1900-1904	1,936	20.3	—	—	1,420	14.9	—	—	1,228	12.8	—	—
1905-1909	1,814	17.4	—	—	1,363	13.0	—	—	1,410	13.5	—	—
1910-1914	1,638	14.5	—	—	1,254	11.1	—	—	1,633	14.4	—	—
1915-1919	1,800	14.4	—	—	1,386	11.1	—	—	1,938	14.7	—	—
1920	1,547	11.6	1,730	9.8	1,204	9.1	1,321	7.5	1,988	15.0	2,203	11.7
1921	1,477	10.6	1,679	8.4	1,158	8.3	1,206	6.4	2,024	14.6	2,289	11.7
1922	1,422	10.4	1,721	9.0	1,123	8.0	1,292	6.7	2,145	15.2	2,514	11.7

Table VII.

PERCENTAGE OF THE TOTAL NUMBER OF DEATHS CAUSED BY THE
VARIOUS DISEASES OR GROUPS OF DISEASES IN DANISH TOWNS.

1890-1899.		1900-1909.	
Disease.	Per cent	Disease.	Per cent
<i>Morbi epidemici</i>	20.5	<i>Morbi organor. respirationis</i>	14.0
Tuberculosis	14.0	<i>Morbi epidemici</i>	13.8
<i>Morbi organor. respirationis</i>	13.5	Tuberculosis	12.4
<i>Morbi cerebri and medullæ spinalis</i>	9.4	<i>Morbi cerebri and medullæ spinalis</i>	9.6
<i>Morbi organor. circulationis</i>	6.6	<i>Cancer</i>	8.7
<i>Marasmus senilis</i>	5.4	<i>Morbi organor. circulationis</i>	7.4
<i>Vitia innata</i>	4.4	<i>Marasmus senilis</i>	6.1
<i>Morbi organor. digestionis</i>	4.2	<i>Vitia innata</i>	5.3
<i>Atrophia infantilis</i>	4.2	<i>Morbi organor. digestionis</i>	4.5
<i>Causa mortis non indicata</i>	3.5	<i>Morbi organor. uropoëticorum et genitalium</i>	2.9
<i>Morbi organor. uropoëticorum et genitalium</i>	3.0	<i>Causa mortis non indicata</i>	2.9
<i>Atrophia infantilis</i>	2.4	<i>Atrophia infantilis</i>	2.3
<i>Casus mortiferi</i>	1.7	<i>Casus mortiferi</i>	2.1
<i>Morbi constitutionales</i>	1.6	<i>Morbi constitutionales</i>	2.0
<i>Suicidia</i>	1.4	<i>Suicidia</i>	1.6
<i>Alcoholismus</i>	1.6	<i>Alcoholismus</i>	1.3
<i>Morbi externarum partium</i>	1.1	<i>Morbi externarum partium</i>	1.2
<i>Morbi internarum partium varii</i>	0.9	<i>Morbi internarum partium varii</i>	1.1
<i>Syphilis</i>	0.3	<i>Syphilis</i>	0.4
<i>Mors in puerperio</i> ¹	0.2	<i>Mors in puerperio</i> ¹	0.1
<i>Morbi varii</i>	0.1	<i>Morbi varii</i>	0.3
	100		100

including febris puerperalis.

Table VII (Continued).

PERCENTAGE OF THE TOTAL NUMBER OF DEATHS CAUSED BY THE
VARIOUS DISEASES OR GROUPS OF DISEASES IN DANISH TOWNS.

1910-1919. .		1920-1922.	
Disease.	Per cent	Disease.	
Morbi organor. respirationis	13.3	Morbi organor. respirationis	
<i>Morbi epidemici</i>	12.6	<i>Cancer</i>	
<i>Cancer</i>	10.9	<i>Morbi epidemici</i>	
Tuberculosis	10.6	Morbi organor. circulationis	
Morbi cerebri et medullæ spinalis..	9.6	Morbi cerebri et medullæ spinalis..	
 Morbi organor. circulationis	8.6	Marasmus senilis	
Marasmus senilis	8.3	Tuberculosis	
Vitia innata	5.2	Vitia innata	
Morbi organor. digestionis	4.6	Morbi organor. digestionis	
Morbi organor. uropoëticorum et genitalium	3.1	Morbi organor. uropoëticorum et genitalium	
Causa mortis non indicata	2.6	Morbi constitutionales	
Morbi constitutionales	2.3	Causa mortis non indicata	
Casus mortiferi	1.7	Casus mortiferi	
Morbi externarum partium	1.4	Morbi externarum partium	
Suicidia	1.3	Suicidia	
Morbi internarum partium varii	1.2	Morbi internarum partium varii	
 Atrophia infantilis	1.0	Syphilis	
Alcoholismus	0.7	Atrophia infantilis	
Syphilis	0.5	Alcoholismus	
Mors in puerperio ¹	0.2	Mors in puerperio ¹	
Morbi varii	0.3		
	100		

¹ Excluding febris puerperalis.

MEDICAL EDUCATION IN DENMARK

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Medical education in Denmark is cheap but extends over a longer period than in other countries (university education : seven years) and is rather exacting. On the other hand, the Danish laws protect effectively the licensed physicians against competition from people without medical education. Unlicensed practice of any kind is illegal in Denmark and quackery has been forbidden since A.D. 1672. Dentists, midwives and masseurs exist, but, besides these, no licensed practitioners who are not university-educated physicians exist in the country except a very few in that part of Schleswig restored to Denmark in A.D. 1918 by the Treaty of Versailles.

All Danish physicians have received the same university education. The old difference in education between physicians and surgeons was abolished in A.D. 1842 by the amalgamation of the Royal Academy of Surgeons in Copenhagen with the medical faculty of the Copenhagen University.

The only valid qualification for medical practice is the certificate of having passed successfully the medical university examinations. By this certificate is acquired the university degree of *candidatus medicinæ et chirurgiæ*, corresponding to the doctor's degree at many foreign universities. In Denmark, the doctor's degree is a special degree, giving the right to lecture at the university without being a salaried professor. Only a minority of Danish physicians qualify themselves as university professors, but it is a widespread custom to style every medical man as doctor, though the official university degree is "candidatus" and his rightful title "physician". Denmark has but one university : the University of Copenhagen, founded A.D. 1479, and everybody who aspires to become a Danish physician must receive his medical education and pass the stipulated examinations at this university. Formerly the medical students from Iceland were educated at the Copenhagen University, but now Icelanders have their own medical school at Reykjavik.

Of course, the teaching at a university must depend on the general educational level of the country, and a few words about the knowledge of Danish undergraduates entering the University will perhaps be useful.

The right of being entered as an undergraduate at the University and of acquiring Danish citizenship is conditional on the successful passing of the "students' examinations", which are held once a year at all the *gymnasia* (secondary schools) in the country. This examination is passed at the age of about eighteen after twelve years of school education (five years preparatory school, four years middle school and three years gymnasium). In the gymnasium the education is divided into three branches differing in some of the topics studied. In the first of these educational branches,

most stress is laid upon classical languages, in the second upon modern languages, in the third upon mathematics and physics. As an introduction to the study of medicine, it is to be remarked that all undergraduates from every educational branch have learnt some elementary physics, zoology, botany, physiology and a little hygiene in the schools. The undergraduates from the mathematical branch have in addition learnt some chemistry, but most of them no Latin. All undergraduates are able to read the three foreign languages English, French and German.

Foreigners are entitled to enter the Copenhagen University if they have been graduated at a foreign university, but do not on that account acquire the rights of Danish medical licences as physicians in Denmark. Women have in all respects the same rights as men at the University.

Only the rights to be entered at the University, to pass its examinations and to receive its degrees are subject to the conditions mentioned above, but the right to follow university instruction is subject to no restrictions at all. Lectures and examinations at the Copenhagen University are public and open to all who may desire to attend them. This is of little consequence in the medical faculty, but in other faculties some lectures are attended by many visitors who are not undergraduates.

Another peculiarity is that the university instruction is very nearly gratuitous. On his admission to the University the student pays a small fee (22 kr., or about £1), and during the medical university education he pays a nominal entrance fee for some of the laboratory courses and for the examinations. But during his university years these expenses taken together only amount to about 150 kr. (or £6) in all. As a general rule no fees at all are paid for any lectures, clinical or other courses.

The greater part of the expenses of the University is in fact paid by the Danish State, although the University enjoys revenues from certain landed properties and bequests. The University has no financial self-government but is a State institution (under the Ministry of Public Instruction) depending financially on the yearly State budget and on laws regarding salaries, etc., as voted by the Danish Parliament. Although scholarships and different kinds of grants are distributed by the authorities, the University is not a State University.

Most undergraduates live in private lodgings in Copenhagen because very few resident colleges exist. These colleges are merely lodgings for undergraduates, instruction being given in them.

In educational (and scientific) matters the University has autonomy within the limits of existing laws and regulations (Royal edicts), and the University confers academic degrees without the interference of other authorities. The constitution of the University is very democratic, the congress of all teachers being its highest authority. This congress elects among its members a university rector (president) for one year at a time. In each of the five faculties of the University, the professors form a faculty council, presided over by a *decanus* (dean) elected every year by and from among the members of the faculty. Each faculty plans and regulates the teaching of its students.

Even the undergraduates elect an undergraduate council, acknowledged by the regulations of the University. This council enjoys only advisory rights but has done useful work in giving information to freshmen, promoting the publishing of books and so on.

At the medical faculty an average number of about 900 are now studying. Between 70 and 100 candidates yearly acquire certificates of the final medical examination. Several medical students fail in the first examinations and leave the University.

The main problem of medical education is everywhere the co-ordination of the practical and theoretical training of the students. At the medical faculty of the Copenhagen University the conditions for this co-ordination are very favourable. The faculty is connected with a big State hospital, the Rigshospital (see M. Ollgaard's report) and nine of the nineteen medical faculty professors are chief physicians in the departments (medical, surgical, specialities) of this hospital. Two faculty professors are chief physicians in speciality departments of municipal hospitals in Copenhagen. Other municipal chief physicians are appointed (and salaried) university lecturers in medical subjects, without being members of the faculty. Besides these the first assistants in the Rigshospital departments and in one of the municipal hospitals give clinical courses in elementary clinical matters, and several hospital physicians (during term 13) also give clinical courses for medical students without being salaried or receiving fees. The theoretical subjects are taught by seven faculty professors, all leaders of university research institutes, where the laboratory exercises of the students are conducted and whose first assistants lecture as well. Four of these institutes adjoin the Rigshospital, the remaining three (among these the hygienic) being in other parts of the town.

Great care is taken in selecting the university professors. In most cases these are selected after a public competition in scientific and teaching ability between the candidates for the professorship.

The methods of teaching are the same as in all modern medical schools. The clinical training is entirely on practical lines, and in the theoretical subjects lectures are used and more replaced by demonstrations, examinations and laboratory exercises, though it must be granted that a medical student still has to attend a considerable number of lectures.

Private tuition is taken in some subjects, especially by most students in anatomy; in other subjects by comparatively few. The medical faculty has tried to abolish this custom by augmenting the amount of instruction given by assistants — but without complete success.

Good textbooks in Danish or other Scandinavian languages (read by every Dane at special training) exist on most subjects. In recent years systems of medicine and surgery have appeared through collaboration of medical authors in Denmark, Iceland, Norway and Sweden. In some subjects the students have to read books in foreign languages, mostly in German or English. In most subjects a Danish textbook is preferred, but the students are allowed to use others.

Every medical student has to pass four sets of examinations at four different stages of medical education. The successful passing of each set is the condition for admission to the next. The Royal edict (of 1912 with later amendments) determines the subjects for the different sets of examinations and the tests in each subject (oral, written, clinical or practical tests). The edict also determines a certain number of practical and clinical courses in different subjects as obligatory, and the student has to produce certificates of attendance at these when entering for examinations. But

these obligatory courses do not form more than a part of a medical student's practical education, everybody partaking in much more practical training than required by the edict.

The Royal edict merely mentions the names of the subjects. Each professor of the medical faculty is bound by the faculty to spend a definite time on the teaching of his whole subject but he has full liberty in the choice of the amount of time he devotes to any part of his subject within these limits. This "liberty of teaching" is appreciated very highly by many university professors.

The liberality which appears in the constitution of the university is very clearly shown also in the theory of its system of instruction. This theory is that the university offers adequate instruction and the possibility of training in all subjects gives the student "liberty of study" in choosing the ways along which he is to acquire the knowledge demanded of him at the examinations he has to pass. Formerly this meant perhaps something; now there is, in practice, very little left of this liberty to the medical student who wants to pass his examinations successfully.

In effect, the medical student does not get much guidance by the Royal edict mentioned. But the medical faculty has prepared a scheme for medical studies pointing out how their university years can most advantageously be made use of if they wish to pass their examinations in due time. A survey of the subjects for each term and the courses to pass in each term is appended to this scheme.

The survey shows that the medical university education is arranged to last fourteen terms, *viz.*, seven years, as the academical year in Denmark has but two terms (spring term, from February to June, and autumn term, from September to December). About seven years are really spent by medical students. Recent statistics of the matter showed an average of 7.37 years. The students are free to lengthen their university studies or to shorten them if they are able to acquire the measure of knowledge and ability demanded at the examinations in a shorter period.

The seven years may be divided into four periods, each terminating in a public examination of public examinations.

Period I comprises the first two terms (one year). In these the undergraduate attends lectures on chemistry and physics and takes part in several obligatory practical exercises in these subjects. The students from the two linguistic branches of university education must pass an easy oral examination in elementary chemistry before being admitted to the chemical laboratory exercises. The students from the mathematical branch have not learnt Latin in the school and must pass a public oral examination in this language. All students are in these two terms required to attend lectures in philosophy, comprising logic, psychology and history of philosophy. At the Copenhagen University, all undergraduates in every faculty are required to pass a public examination in philosophy before being admitted to any other public university examinations. By the successful passing of this examination at the end of the first term the student gets the university degree of *candidatus philosophiæ*. At the same period the medical student passes public oral examinations in chemistry and physics and a practical test in qualitative inorganic analysis. These last form a "practical section" of the medical examinations.

In the first two terms many medical students start the study of anatomy and lectures on general biology.

Period II comprises the next five terms and is mostly occupied by the study of anatomy and physiology, including practical instruction in the anatomical museum and practical courses in histology, dissection, and physiological chemistry. In the first terms of this period the medical student starts his clinical education in doing service as "volunteer" in hospital departments. In spite of its name, this service is obligatory for a period of 12 months. It occupies only the morning hours and takes place in the Rigshospital or in one of the municipal hospitals. The first six months the student does service in a surgical department, the next six in medical and speciality departments (and post-mortem department). Volunteers are taught asepsis, dressing wounds, narcosis and examination of urine. In the wards they serve as clerks under chief and secondary physicians. The main point in this service should be that the students grow acquainted with the work and duty of a physician and get a general impression of the course of maladies and their treatment.

This period terminates in the passing of public oral examinations in anatomy and physiology.

Period III lasts five terms. In this period the student learns general pathology, bacteriology, pathological anatomy, pharmacology and hygiene, but at the same time he is being trained in practical and theoretical clinical subjects, and this clinical training is continued during the fourth (last) period. In period III the morning hours are devoted to clinical studies, the afternoon to the "theoretical" subjects mentioned.

General pathology includes bacteriology, parasitology, immunology, elements of pathological physiology and heredity. A special lecturer in bacteriology and parasitology assists the professor, and the students have to pass an obligatory practical examination in bacteriology.

The instruction in pathological anatomy comprises exercises in pathological anatomy and in section technique, practical demonstrations of fresh specimens, the presentation of the anatomo-pathological museum, etc.

The subject of pharmacology embraces pharmacognosy (demonstrations and the dispensance at a museum) and writing of prescriptions. A practical course in experimental pharmacology is attended by many students.

A course in hygiene is obligatory for all medical students and lasts for one term. Bacteriology is connected with the instruction of general pathology, this course deals specially with the social and physiologic branches of hygiene (control of drinking water and foods, sewage, buildings, hospitals, legislation about epidemics and tuberculosis, child welfare, school and industrial hygiene, vital statistics, etc.).

The course comprises lectures, demonstrations and visits to public institutions of sanitary interest (waterworks, slaughter-houses, dairies, etc.).

The third period terminates at the end of the twelfth term (sixth year) with examinations in pharmacology (oral), pathological anatomy (oral and practical test in examining specimens) and general pathology (oral and an essay, written on a given

subject in six hours without use of books or notes). In hygiene no examination takes place ; a certificate of attendance at the hygienic course is all that is demanded of the student in this subject.

Clinical education during periods III and IV. Period IV comprises the last two terms (seventh year), but, as the clinical education proper covers not only these two terms but a great part of all five terms of period III, the whole clinical training during these seven terms is mentioned collectively.

The study of medicine is entered upon in the first term of period III by participation in a practical course in the examination of patients and clinical diagnosis, held by assistants in medical hospital departments. In a later term the student takes up obligations in medical clinics under a professor or a head physician, and, in his last term, medical physics under the professor of clinical medicine. In the last term the student passes a course in clinical laboratory exercises and a course in writing essays on medical subjects. For six terms he attends clinical and other lectures on medicine.

The study of surgery corresponds to that of medicine : a practical elementary clinical course held by an assistant surgeon (second term of period III), surgical physics under a professor or head surgeon and finally participation clinics under the professor of clinical surgery. In addition, attendance at clinical and other surgical lectures and passing through a practical course in operative surgery (on corpses).

The outlined instruction in medicine and surgery forms but a part of a student's practical training in these principal subjects. Nearly every one of the medical students supplements his clinical education during his university years by doing service as *practicand* in hospital departments. A *practicand* course lasts a month, and during the summer months during the university vacations are often taken advantage of for this purpose. During the service the student notes the histories of new cases, and these histories are criticised by the head physician during the morning rounds which the student attends. Like other instruction, this is gratuitous and can be obtained at several hospitals. In the Rigshospital, the *practicand* (or *propaedeut*) service of students is organised in the medical and surgical departments and supplemented by service in the out-patient departments and the institute of physical therapy.

The different students take a varying number of *practicand* courses during their study. Several do also *practicand* courses in speciality departments as well.

During periods III and IV of his study, the student is further required to take the following obligatory clinical courses : ophthalmology, oto-rhino-laryngology, pediatrics, psychiatrics, dermato-venerology and epidemic diseases. The courses are held by the faculty professors of these subjects. These professors are mostly head physicians at the corresponding departments at the Rigshospital (two are head physicians in departments at the municipal hospital, where their instruction takes place). The course in dermato-venerology ends, in accordance with a recent regulation, with a public clinical test. The other speciality courses do not end with any public examination, but the student has to produce certificates of attendance before he is admitted to the final medical examinations.

Obstetrics (including gynecology) occupy an exceptional place among the special subjects in being represented among the final examinations. The student attends lectures and exercises in this subject for a couple of terms and passes 24 hours at the hospital maternity department, being present at the births occurring.

All medical students have to pass a short obligatory course in vaccination and to attend lectures and demonstrations in forensic medicine.

The final examinations comprise :

In medicine : 1. — A clinical test (examination of a patient, report, discussion of diagnosis and treatment) ; 2. — An essay, written on a given subject from internal medicine, or sometimes from pediatrics, neurology, psychiatrics or venerology (for 4 hours without using books or notes) ; 3. — Oral examination. In surgery as in medicine : 1. — A clinical test ; 2. — A written essay (subject from surgery or sometimes ophthalmology or otology) ; 3. — Oral examination. Further : 4. Oral examination in operative surgery with practical test on corpse.

In obstetrics (and gynecology) : oral examination with practical test on obstetrical anatomy.

In forensic medicine : Oral examination.

Having passed the examination successfully, the student takes " the medical oath " (a variation of the ancient hippocratic oath) before the dean of the faculty and receives a certificate qualifying for medical practice and giving the degree of *canis medicinæ et chirurgiæ*. To get a licence to assist at child-births the candidate, after the examinations, serve one month as resident junior assistant in the maternity department of the Rigshospital, when he receives a special diploma.

All the examinations mentioned (except the written essays) are public (since A.D. 1814) and have an audience composed mostly of medical students. Examinations are held twice a year at the closing of terms. Each professor is examiner on his subject and the examinee earns certain marks according to his ability. In judging this the professor is assisted by two censors who have attended the examination. These censors are salaried and are experts in the subject without appointment in university positions. They are appointed by the Ministry of Public Instruction on the proposal of a medical committee of which the faculty dean is a member but whose other members are independent of the University. The censors assist in selecting subjects for the written examination essays.

Students failing the examination in one subject have to enter for renewed examinations in all subjects of the corresponding series and cannot do so until one year later (with exceptions).

A medical student's marks from all his public university examinations (except in philosophy) are added by use of a complicated method, and the result indicates the class of his degree. Five grades of " degrees " exist : *Laudabilis præ ceteris* (very rare), *Laudabilis* (or first class), *Haud illaudabilis primi gradus* (second class), *Haud illaudabilis secundi gradus* and — when failing — *Rejectus*.

The character *Laudabilis* (including *Laudabilis præ ceteris*) is a condition for admission to the degree of *doctor medicinæ*, but dispensation from this rule can be obtained. Not more than about 10 per cent of physicians acquire the doctor degree.

If a physician wishes to have this degree, he must complete a comprehensive original scientific work on some subject (related to the medical sciences) and write a treatise on it. Before being published, this treatise is censored by a committee of two medical science elected in each case by the faculty (among the faculty professors, rarely any others). Based on evidence from this committee the medical faculty "admits the treatise for public defence" or rejects it. When admitted, the treatise is printed at the author's expense (a fraction of which may be covered by special university fund) and published. Formerly all such treatises had to be printed in Danish (or Latin). Recently a rule was passed allowing them to be published in English, French or German when the faculty gives its permission. Some weeks later a public "disputation action" takes place in one of the university auditories, where the applicant *ex cathedra* has to defend his work *viva voce* against the (obligatory) criticisms of two of his opponents chosen by the faculty (in every case the censors of the treatise) and against every academical graduate desiring to criticise (or sometimes to approve) *viva voce* his opponent. The faculty members are required to attend the disputation action (part of it), and a large audience of students, physicians, relatives of the applicant and journalists from daily papers is usually present. The dean is chairman, and the action lasts several hours but is practically in every case deemed successful for the applicant by the faculty, the real decision lying in the admission of the treatise for public defence. The successful applicant receives a diploma in Latin, conferring on him the degree of doctor and *summos in medicina honores*. The doctor has now the right to lecture at the University, of course without receiving any fee. The ceremony is of ancient origin. The degree is acquired by candidates aspiring to university or hospital appointments and several years after acquiring the degree of *candidatus* and the licence for medical practice.

The majority of candidates continue their practical training after having finished their university studies, although they are allowed to practise. About half the number of candidates serve one year as "assistants" in one of the large hospitals (in Copenhagen or in some other large Danish town). This service ("turnus" service) is salaried and the admission organised in accordance with seniority (by a special medical committee). The admittance to three-months appointments as salaried assistants in speciality departments (psychiatric, epidemical diseases, dermato-venerology) is organised on similar lines. Many other assistants in Danish hospitals are appointed for a limited time (6 or 12 months) and many physicians do not begin private practice before having acquired further practical skill during such appointments. Appointments as first assistants in the large hospital departments of Copenhagen are not generally acquired by those aspiring earlier than 6-8 years after their final examination.

The General Danish Medical Association, comprising nearly all Danish physicians, has laid down definite rules for those aspiring to be acknowledged as specialists by the Association. Several years hospital training as assistants in special hospital departments is required, and compliance with the rules is assured by a private committee. Every year the Association publishes a list containing the names of acknowledged specialists.

This association has organised yearly "continuation courses" of short duration intended to bring the practical knowledge of elder physicians up to date. These courses are paid for and take place in Copenhagen. Head physicians in hospital departments and university professors are teachers.

Denmark has compulsory military enlistment, and the degree of *candidatus medicine et chirurgiæ* carries the right of making military service as subordinate military surgeon. Medical students have the same right when they produce certificate of having done 12 months' service as "volunteers" in hospital departments having taken a six-months' practical clinical course. During their military service candidates and students pass several short courses in army surgery, army hygiene, etc.

The Institution of Medical Health Officers is a very old one in Denmark, but the requirement of a special training of these officers is of recent date. In 1911, a commission, appointed by law, proposed a reform of Danish sanitary administration, the proposal emphasising the necessity of a special education of physicians aspiring to health officers. Formerly some instruction had been given to officiating health officers in courses at the university, but none to candidates for these posts. A bill conforming with the proposals of the commission was carried by the Danish Parliament in 1914. The bill laid down that a special education terminating in examinations should be established by royal edict and the rules proposed by the National Board of Health and the Medical Faculty of the University. No new State health officer could be appointed without having passed these examinations successfully. Officiating officers had at some chosen time to enter for examinations if they wished to officiate after 1925.

By royal edict of 1914 the health officer's education and examinations were established under administration of a special committee connected with the University. The committee consists of the university professors of hygiene, forensic medicine, medical pathology, and psychiatrics, the President of the National Board of Health, the Director of the State Serum Institute and a jurist teaching sanitary law.

The education of the health officer consists of practical clinical training generally including admission to a series of practical courses and lectures and terminating in examinations.

The royal edict requires that the applicant, before entering for examinations, has:

- (1) A certificate of having passed successfully all medical examinations;
- (2) A diploma of one month's service in the maternity hospital;
- (3) Served as assistant for six months at a medical and for six months at a surgical hospital department;
- (4) Served at least for three months as assistant in a fever hospital;
- (5) Served at least for three months as assistant in a psychiatric hospital department or lunatic asylum;

(6) Been a medical practitioner for at least three months in the country or in a small town ;

(7) Passed courses in hygiene with vital statistics, forensic medicine, forensic psychiatrics, bacteriology and epidemiology, and sanitary law.

These courses take place once a year and cover a period of four months (university term). Each course lasts throughout the four months, but all courses are attended in the same months. The instruction in Danish medical law is given by a judicial secretary. The other subjects are taught by the corresponding medical faculty professors (and their assistants).

The course in hygiene and vital statistics includes examinatory lectures, a practical course in hygienic laboratory methods (analysis of drinking-water, foods, etc.) and visits to sanitary institutions with instruction on inspecting. It terminates in a public oral examination and a written essay on a given subject (for six hours without using books or notes).

The course in forensic medicine consists partly of lectures, partly in going to legal cases, exercises in writing legal declarations (on the evidence given by post-mortem examinations and laboratory analysis), exercises in section technique and a course in forensic laboratory methods. The course terminates with a public oral examination and tests in making a section or a laboratory analysis and in writing a legal declaration thereon.

Legal psychiatry is taught in the municipal hospital department where criminals are observed when mental abnormalities are suspected. The university professor of psychiatrics is head physician of this department. The criminals are demonstrated and lectured on. Exercises are held in writing legal psychiatric declarations on the evidence of acts and examination of the patient. The examination consists in writing such a declaration (three days allowed for observing the patient) and discussing its contents (*viva voce*) with the professor.

Instruction in bacteriology and epidemiology includes practical bacteriological exercises, parasitological demonstrations and lectures on epidemiology and immunology. A public oral examination is held.

Lectures on sanitary law are attended, and public oral examination in this subject takes place.

A nominal entrance fee is paid for the practical courses and the examinations.

All examinations are held at the end of the four-months term. As by the examinations of medical students, the examinee earns marks in every subject, the professor being assisted by two censors in judging what marks the examinee deserves. The censors are nominated by the Ministry of Education after proposal from the National Board of Health.

Having complied with the requested stipulations about practical clinical training and successfully passed the examinations, the physician receives a diploma admitting him to apply for office as State health officer.

The diploma is obtained by an average number of eight physicians yearly. This number is more than sufficient for the needs of Denmark and colonies.

A sum is yearly voted on the State budget for the arrangement (by the National Board of Health) of continuation courses for officiating health officers. The cost

only two weeks and comprises hygiene, immunology (at the State Serum Institute), forensic medicine and psychiatrics, sanitary law and venereal diseases. Off-lying medical officers are able to partake in this course every sixth year.

On the whole, medical education is considered successful in Denmark and the physicians are duly appreciated by the population. Medical aid is extensively used. Few "homœopaths" and the like exist among Danish physicians, but medical sects exist to a very small extent. The vast majority rely on the international scientific foundation of modern medicine.

The many new hospitals and other institutions have absorbed a part of the younger physicians, but it is asserted that during recent years too many physicians have been educated in Denmark.

The officers of health are handicapped by their low salaries, which compel most of them to spend much time in practising. It is too early to decide whether their special training, so recently introduced, has been a success.

Survey over the first seven terms.

Subject.	Term.						
	1st.	2nd	3rd	4th	5th	6th	7th
Mathematics (for undergraduates of mathematical branch).....	+						
Philosophy.....	+	+					
Physics.....	+	+					
Physical exercises.....	O						
Chemistry, inorganic.....	+						
» organic.....		+					
» exercises in inorganic analysis.....	+						
» » titration analysis.....		O					
» » experiments.....		O					
» examinatory lessons.....	+	+					
Anatomy.....	+	+					
Service as hospital volunteer.....			+	+	+	+	+
Physiology.....			+	+		+	+
Exercises in physiological chemistry.....					O		
» » microscopy and histology.....					+		
» » dissection of corpses.....						O	
Demonstrations of physiological experiments ..							+

O means that the course is obligatory

Survey over eighth to fourteenth term.

Subject	Term					
	8th	9th	10th	11th	12th	13th
Général pathology	+	+	+	+	+	
Bacteriological exercises	O					
Exercises in experimental pathology	+					
Pathological anatomy.....	+	+	+	+	+	
Exercises in pathological histology				+		
Demonstrations of fresh pathologo-anatomic specimens		+	+	+	+	
Exercises in section technique					+	
Visits in post-mortem department						+
Pharmacology	+	+	+	+	+	
Exercises in experimental pharmacology					+	
Hygiene		O				
Propædæutic instruction in medical clinic.....	+					
» » in surgical clinic		+				
Medical clinic			O			
Clinical lectures in medicine		+	+	+	+	+
Theoretical medicine:.....						+
Exercises in writing medical essays						
Exercises in clinical laboratory methods						
Surgical clinic						O
Clinical lectures in surgery		+	+	+	+	+
General surgery		+	+	+	+	
Special surgery						+
Operative surgery (with exercises)						+
Obstetrics				+	+	+
Obstetrical exercises						+
Course in ophthalmology				O		
» » oto-laryngology				O		
» » psychiatry.....						O
» » pediatrics						O
» » epidemical diseases					O	
» » dermato-venerology						O
Forensic medicine						
Course in vaccination						

O means that the course is obligatory.

THE PERSONNEL IN THE MEDICAL SERVICE

BY DR. GORDON NORRIE,

Vice-President of the National Health Board.

APOTHECARIES OR PHARMACEUTICAL CHEMISTS

From the beginning of the sixteenth century, the business in medicines in Denmark has been privileged, and regulations regarding it were for the first time legalised by Decree of January 10th, 1619, later on by that of December 4th, 1672, which in all respects remained in force until the passing of the Apothecary Act of April 29th, 1842. Previously the privilege was granted to a qualified apothecary as his own property, so that he could sell it to another man who was in a position to acquire the right to carry on a pharmaceutical chemist's business, but this was altered by the Royal Resolution of December 23rd, 1842, which laid down that all privileges granted in the past should be purely personal. Since 1842 therefore there have been two kinds of privileges: those (January 1924 : 101) which can be sold by the owner to a person who is qualified to acquire an apothecary privilege and is consequently inherited by him or other relative who possesses these qualifications, and the so-called personal privileges (January 1924 : 206). These latter are granted for a lifetime, and, on the death of an apothecary or retirement from some other cause, they are declared vacant and can be applied for by qualified persons. The site of an apothecary's shop is determined by a Royal Resolution, and permission to establish a dispensary at a place where an apothecary cannot be assured a certain income is not granted.

The training demanded of an apothecary consists of a general preparatory examination with tests in Latin, then a term as pupil, for three and a-half years, at a dispensary, after which the assistant's examination in Copenhagen; when this has been passed, the candidate's service as an assistant at a dispensary and then study for a year and a-half at the Pharmaceutical Academy, concluding with the "farmaceutisk kandidat-examen" (pharmaceutical candidate examination). To be an assistant at an apothecary's shop it is therefore necessary to have at least passed the assistant examination, but at every apothecary's shop there must, besides the apothecary, who is responsible for the management, be at least one pharmaceutical candidate. The National Board of Health may, however, sanction the small dispensaries to have only one "examinatus pharmaciæ" as an assistant.

To obtain a licence to carry on an apothecary's shop an apothecary must be a citizen of the country or have been naturalised. He must have attained the age of twenty, must have passed the pharmaceutical candidate examination, have the right of disposal of his goods and chattels and conduct himself as an honourable man. Before the licence is delivered, the applicant must take the apothecary's pledge. This holds also in the case of the pharmaceutical candidate who has received permission

from the National Board of Health to carry on temporarily an apothecary's shop on his own responsibility, for instance when the apothecary himself is ill.

An apothecary can be deprived of his right to use his privilege if, on account of gross incapacity or mental deficiency, he is considered to be a danger to his fellow beings, but it can also be taken from him by a court of law should he violate the Apothecary Act or be guilty of what, in public opinion, is considered a disgraceful act.

A Royal Decree lays down what prepared or unprepared drugs apothecaries may have the right to deal in, and the Decree of August 1st, 1914, contains elaborate regulations for all the substances which can be taken into consideration. The right to import drugs from abroad at a selling-price of under 40 kr. (for opium, cocaine, morphine, and preparations of these under 200 kr.) is restricted to pharmaceutical chemists and the Serum Institutes. Hospitals have the right to make up their medicines themselves for that purpose they have a pharmaceutical candidate. The Home Department may allow an apothecary's shop to establish a store — that is to say a place where medicines which may be supplied without a prescription and sold over the counter — at places in the neighbourhood where there are no chemist shops. Doctors who live where there is no chemist may be allowed to deliver medicines prepared from the doctor's prescription by a particular chemist, but only in very exceptional cases (as on distant islands) are they allowed to make up their medicines themselves. The medicine supply of doctors is under the control of the district medical officer. Apothecary shops must be fitted up in accordance with the National Board of Health's instructions, must have a supply of the drugs prescribed in the *Pharmacopæia* and must procure what is prescribed by a doctor, a dentist or a veterinary surgeon.

The National Board of Health decides what drugs may be dispensed only when prescribed by a doctor, a dentist and a veterinary surgeon, and can therefore restrict the trade in arcana by providing that arcana are to be supplied only when prescribed. Once a year the rate for every single drug is fixed, and this rate must be adhered to; this can be checked, as the prices of drugs must be entered on the prescription. There are special rules for poisons, founded on the Decree of April 1st, 1796, and the Government Regulation of April 19th, 1843. A new set of regulations more suited to the times is in course of preparation.

The County Medical Officer and a specially appointed pharmaceutical inspector pay surprise visits to the apothecary's shops every year, and the inspection includes the arrangement of the shop, order and cleanliness as well as the nature of the drugs. The checking of the weight of made-up powders, etc. An examination of the drugs is made partly at the shop and partly at the inspector's laboratory.

All apothecary shops established since 1894 pay a tax to the Apothecary Fund, which, among other things, contributes to the pensioning of old and infirm apothecaries who are no longer able to conduct their shops, and to widows and children to whom no provision is made. The tax is paid yearly and is fixed in proportion to the income of the apothecary shop.

MIDWIVES.

The institution of midwifery is very old in Denmark. The first Decree was issued as back as November 30th, 1714, and has been superseded by several, the last of which is the Act of June 13th, 1914, with amendments of June 23rd, 1920, now in force.

In 1787, the training of midwives was assigned to the lying-in hospital in Copenhagen, now a part of the Rigshospital. The training at present occupies one year and is very severe. It concludes with an examination. The midwife, after she has taken the midwifery pledge and received her diploma, is authorised to practice anywhere she pleases in the country. Practically all parturition cases are in the hands of midwives, a doctor seldom assisting at a child-birth single-handed. Only doctors and midwives are authorised to officiate as *accoucheurs*.

The duties of midwife are definitely stated in the instructions prepared by the Ministry of Justice (Home Department) issued on April 20th, 1921, and they must undertake anything beyond what they have learnt at school or what is enjoined in the instructions. When setting up in practice a midwife must report to the Medical Officer of Health who is her superior officer in the neighbourhood and whose orders she must obey, subject to the right of appeal to the Board of Health or the Home Department. She must summon a doctor in serious cases and, if she may undertake version, she must not use any surgical instruments.

She must keep a careful record of all births, more particularly where illegitimate children are concerned, where she must accurately note the signs of development and the usual form arranged for that purpose.

Books and forms are supplied free of charge through the Medical Officer of Health.

A midwife must report the cases of child-birth at which she has assisted and, in the case of a still-born child, must make out a certificate which, outside the provincial towns, is accepted as a certificate of death.

A midwife must not take in cases of confinement at her own residence without permission from the Medical Officer of Health. Contagious diseases, whether in her person or in that of members of her household, must at once be reported to the Medical Officer of Health, who has to decide what measures are to be taken.

If necessary the midwife may be suspended for a short or long period. The disbursements by a midwife in her practice are paid for out of the public funds. A midwife is bound to silence as regards what she sees or hears in the course of her practice.

To secure help to the inhabitants during child-birth, district midwives have been appointed all over the country, the Home Office approving of the area being partitioned into districts. Large towns where there are a number of midwives in practice are exempted from appointing district midwives.

In the country they are paid by the rural municipalities, in the towns by the urban municipalities. The salary is 700 kr. yearly rising to 1,000 kr., besides a compensation (when prices are high), suitable dwellings or an allowance for same, instruction, and, where possible, a telephone. In out-of-the-way places where the birth rate is under 35 per annum, the State may make an extra allowance of up to 400 kr.

per annum. Midwives may accept the fees agreed upon with their patients, but in the case of district midwives there is a minimum fee, which is reckoned at about 1 per cent of the husband's income, though not below 15 kr. or above 150 kr. If paid by the Board of Guardians (poor relief) the fee is, in town, 20 kr., and, in the country, 15 kr. per birth. Should a midwife be unable to recover her fees, she may apply to the Board of Guardians, who will pay her according to their rates. A midwife's fees are a preferential claim on the estate of a deceased.

A district midwife must retire at the age of 70 but her services may be dispensed with at the age of 65 on account of old age. In this case, as well as if she is dismissed for no fault of her own, she receives a pension which is reckoned partly on the length of her service and partly on the number of births she has attended but must not be more than 600 kr. nor exceed 1,300 kr. yearly (besides compensation allowance). A district midwife who has been compelled to retire on account of old age must not practise in her old district.

Salaries and pensions are paid partly by the municipalities and partly by the State, which contributes 345,000 kr. annually for this purpose.

There are in all 1,100 midwives in practice in the country, and, of these, 75 are district midwives.

A midwife who, on account of lunacy, alcoholism, morphinism, etc. or because of gross incapacity, is a danger to her fellow-beings may, like other medical practitioners, be deprived of the right to practise, her diploma being taken from her, but she can be deprived of this right by a court of law if she has been guilty of what in public opinion is considered a disgraceful action.

The Danish midwives are particularly skilful, and this is evidenced by the results obtained in combating puerperal fever and infantile ophthalmia.

Until about 1870 puerperal fever raged in the Danish as in all other countries, in hospitals, but shortly after Lister's antiseptic treatment of wounds became known Professor Stadfeldt began to introduce this principle into the lying-in-hospital at Copenhagen, and the astonishing results were for the first time made known at the Medical Congress at Brussels in 1876, where they created a well-deserved sensation. Since that time the training of midwives has been most carefully directed towards the prevention of puerperal fever, and the result is that in 1921 only 329 cases were reported in the whole country, or only 39 in 10,000 births, and even in Copenhagen only 30 in 10,000 births. In 1921 there were in the whole country 102 deaths from that malady.

Since 1900, midwives have been instructed to drop a solution of nitrate of silver (1:150) into the eyes of every infant immediately after birth.

It was some years before this method was carried out thoroughly, for there were 16 children at the Institute for the Blind who had become blind as a result of infantile ophthalmia, who were born between 1900 and 1904, about the same number as in previous years, but of children born between 1905 and 1909 only three were admitted to the Institute. The same result was shown with regard to children born between 1910 and 1914, while between 1915 and 1919 only one case of blindness through infantile ophthalmia was admitted.

DENTISTS.

In the old days dentists belonged to a class of itinerant operators who were supposed to have a licence to practise their art but who, in most cases, did not possess one. In the middle of the eighteenth century, they were supposed to pass an examination to qualify them to practise, but this was often not insisted on.

A decree of September 5th, 1794, regarding quackery contained the provision that any person who gave evidence of distinct ability in any individual branch of the medical art might be permitted to practise in that particular line in the locality in which he resided, and right up to the time that the Act of February 25th, 1916, regarding quackery came into effect, all dentist licences were issued on the basis of this decree. It was not until 1916 that it was decided to make their own arrangements to qualify for their profession. In 1916 a separate examination for dentists was instituted under the Faculty of Medicine, and in 1889 the School for Dentistry was opened, the present arrangements of which were determined by the Royal Decree of April 13th, 1909. The time for study is three

years in accordance with the Act of February 25th, 1916, no one can call himself a dentist unless he has passed the examination for dentists and has afterwards served as an assistant to a dentist for two years, has not been found guilty of any discreditable action and has given a written pledge to the National Board of Health faithfully to perform his duties as a dentist. When these conditions have been fulfilled with the Administration of the Health Department issues a diploma for dentists to the person concerned. Doctors (medical men) are permitted to practise as dentists but must not style themselves dentists unless they have passed the examination for dentists or a special supplementary examination. In 1921 there were 100 qualified dentists in the country.

Dentists are authorised to undertake the local treatment of dental diseases as well as the treatment of such benignant ailment of the mucous membrane of the mouth, and of the jaws as are directly connected with dental diseases. They may undertake anaesthesia, under certain regulations, but must not produce complete narcosis without the assistance of a doctor (medical man).

Dentists are authorised to order from the chemists the medicaments (drugs, etc.) necessary for them for the treatment of teeth and narcotising but they must not prescribe medicaments (drugs, etc.) for internal use.

Dentists are under the jurisdiction of the National Board of Health and must report to the District Medical Officer when setting up in practice or removing.

Dentists who, on account of lunacy, alcoholism, morphinism, etc., or because of other reasons, are a danger to their fellow-beings can be deprived of their *jus practicandi*, in the case of doctors, and this, moreover, can be done by a court of law if they are found, in public opinion, to be considered a disgraceful action.

NURSES.

From the very earliest times women have been employed for nursing, and in any case from the beginning of the seventeenth century we know of regulations to the effect that in the army, as well as in hospitals, *i.e.* asylums for the infirm, one woman was

allotted to every ten patients. In civil infirmaries nurses have always been employed and in this country, at any rate since 1818, when the present Military Hospital in Copenhagen was opened, women have been employed as nurses in the army.

These women, however, belonged, in most cases, to the lower classes, and, as they were miserably paid, they were obliged to accept "tips" from the patients, with the result that those who could pay were better tended than those who could not.

The first improvement made was the founding of the "Deaconesses" in 1863, next by the founding of the Danish Red Cross in 1875. In the following year the Copenhagen Kommunehospital (Municipal hospital) began to receive educated ladies as nurses, but it was not until 1897 that a school was established at this hospital, then in 1910 at the Rigshospital (State Hospital) and finally in 1913 at Bispebjerg Hospital, when these two hospitals were opened.

The training at these schools, which is both practical and theoretical, like that of the English and American schools, lasts three years and concludes with an examination.

As regards home nursing, the nursing sisters (Deaconesses) took this up in 1871, and were subsequently followed by other institutions, and in 1878 the first rural nursing association was founded. The association developed long after the State had begun to give grants for the training of nurses, but the training for many years was inferior. The demand for training has gradually increased so that now a three-years training is as a rule demanded even in the rural districts.

This is carried out in most instances at the many excellent provincial infirmaries. A great improvement was made in 1909, when the majority of rural nursing associations amalgamated and formed a Central Association for Nursing outside Copenhagen.

Quite recently a new important point has arisen, the sick-benefit clubs have taken up the nurse question on behalf of their members. In Copenhagen the municipality has also started home nursing to relieve the pressure on the hospitals. Finally there are many private nurses in the country. It is not possible to state definitely how many nurses there are, but the number of trained nurses is about 5,500.

An important event for the development of the nurse question was the founding of the Dansk Sygeplejeforbund (the Danish National Council of Nurses) in 1899. This association is not only a "union" for the protection and promotion of the common interests of the nurses but works zealously for the raising of their standard of training and demands that its members shall undergo a three-years course of training. It provides for continuation courses, etc. It numbers 5,000 members. The Danish National Council of Nurses is affiliated to the International Council of Nurses.

During recent years great improvement has been made in the condition of rural nursing. Since 1919 the salaries on an average have been raised to three times what they were previously. This is the case not only in the hospitals but also as regards nursing in the country, where their salaries, in ready money, are 1,400 to 1,800 kr. per annum. Hospital nurses are considerably better paid.

The State affords aid to the nurses in different ways, partly by grants for special training and partly by contributions to old-age pensions, provided the nurses themselves or their associations also contribute. The contribution from the State amounts to 100 kr. annually, of which 16,000 kr. is allotted to old-age pensions.

A bill proposing the State registration of nurses was submitted to Parliament but has not yet been passed. The training of the Danish nurses is quite on a level with that of their English and American sisters.

MASSEURS.

There is only one regulation as regards masseurs, namely that they must not treat patients unless massage has been prescribed by a doctor, otherwise they commit an offence under the Decree of September 5th, 1794, regarding quackery.

The State demands no special training, but for a number of years Den Almindelige Lægeforening (the General Danish Medical Association) has held an examination for masseurs and bestowed certificates on those who have passed.

DISINFECTORS.

In accordance with the Epidemic Act of May 15th, 1915, Section 29, all persons employed as disinfectors must undergo a training recognised by the Home Department, and consequently classes for disinfectors have been established both in Copenhagen and at Aarhus, where disinfectors are instructed in theory and take part in the practical work of disinfection.



QUACKS.

Quackery plays a very minor part in Denmark and prosecutions are very rare. This is most probably due partly to the enlightened state of the people and partly to the facilities in procuring medical assistance.

Quackery has been suppressed by legal measures, the Decree of September 5th, 1854, prohibiting it and punishing any infringement with a fine, which, in pursuance of the Act of March 3rd, 1854, may extend to 200 kr., or with simple imprisonment for six months. Besides this, the Act of April 29th, 1913, regarding apothecaries or pharmaceutical chemists, in Section 19 provides that, without permission from the National Board of Health, the advertising of such wares as bandages, electric belts, &c., for the cure of deafness, derangement of vision, etc., is prohibited. In addition to this the National Board of Health is empowered to prohibit the advertising

of medicines or remedies said to have healing or disinfecting properties or to be in any way effective against sickness, including *arcana*, also of preparation for disinfecting persons, rooms or goods and chattels in so far as such advertising is done through the medium of newspapers, placards, or by the distribution of descriptive or illustrated matter to the public, to large or indefinite circles of persons or to single persons who are unknown to the advertiser and are not doctors, dentists, veterinary surgeons or apothecaries ; similarly by the use of any means that can be classed with the above.

The National Board of Health therefore issues a prohibition against advertisements recommending remedies as healing, disinfecting or being in any way effective against sickness, and, if this order is infringed, both the advertiser and the paper in which the advertisement appears are prosecuted. The owners of newspapers are therefore very careful as to the advertisements they accept.

Another matter of importance is that the National Board of Health decides which medicines may be supplied without a prescription and which only on the production of a prescription. In the latter category are most of the *arcana*.

PUBLIC CONTROL OF EPIDEMICS

BY THORVALD MADSEN,

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Denmark must be said to have a good standing in the campaign against epidemic diseases.

The great epidemics, which formerly were so dreaded, have long since disappeared from this country. The *plague*, which raged in a fearful epidemic in the beginning of the eighteenth century, has not appeared since. Neither has any case of rat plague been substantiated.

Cholera appeared as a great epidemic in Copenhagen in 1853, but gradually died out in the following years. The great epidemic in Hamburg in 1892 caused a few cases. Since then there has only been a single case of a patient brought in from a passing steamer.

In 1893, there was a small epidemic of typhus (43 cases), but since then there have been none, not even during the great war.

No large *smallpox* epidemics have appeared during the last generation. It has not been possible, by an extensive application of vaccination and revaccination, to prevent the scattered cases which now and then have been caused by some imported cases.

Malaria, which about 1830 was the most dreaded epidemic and of which, as late as the middle of the 'seventies, about 9,000 cases were reported annually, has now almost completely disappeared. The causes may be found in the lower mean temperature of the winters and in the systematic treatment with quinine; further, it is believed that the mosquitoes, which still exist in great numbers, have by degrees changed their habits from being suckers of human blood to become suckers of cattle blood.

Dysentery (Shiga-Kruse) is rare; in 1911 there was a small very localised epidemic in a village in the north of Jutland. *Paradysentery* was at the same time rather widely spread, but it has of late years been very rare.

Epidemic cerebro-spinal meningitis was comparatively widespread in 1916 (288 cases in 1917 (282), 1918 (251), and 1919 (227), and assumed a specially malignant form, *epidemic cerebro-spinal meningitis*, which had not been observed before. The cause was found practically proved to be meningococci, which are closely related to the English group II. The number of cases decreased greatly in latter years (100 cases in 1923). Some of the cases recorded on the monthly lists were not due to meningococci but to pneumococci and *Staphylococcus bacilli*.

Poliomyelitis has in some years shown a tendency to appear as an epidemic. In 1911 (287 cases), 1912 (368), and 1918 (389), but it is at present quiescent (1923 7 cases).

For the other more important epidemic diseases, such as typhoid fever, diphtheria and scarlet fever, reference should be made to Dr. H. J. Hansen's article in "Danish Medical Statistics".

EPIDEMIC LEGISLATION.

The first beginning of epidemic legislation dates from 1782, when a regulation of April 17th decided that treatment at public cost could be instituted in serious epidemics, comprising free medical assistance and medicine, and in special cases the right of isolating the patient. In 1794, the clergy, medical men and large landowners were enjoined to send in annual reports as to the appearance of infectious diseases, at first to the sheriff and, from 1807, to the National Board of Health (*Sundhedskollegiet*).

The epidemiological legislation now in force dates from 1888, when the foundation of the campaign against epidemics in Denmark (gratuitous treatment), was introduced. It has since been extended by a series of statutes, the last of May 5th, 1915 (translated into French : *Bulletin de l'Office international d'hygiène publique*, 1916, p. 23). This does not apply to diseases introduced from without, for which the quarantine statute provides, nor to tuberculosis or venereal diseases, which have their own legislation.

In the statute for epidemics provision is made, in addition to the general measures, for a special measure, "public treatment", which is always to be applied in a series of diseases considered especially "dangerous" (plague, cholera, yellow fever, dysentery, exanthematic typhus, smallpox and leprosy) and which can also be used for other diseases should circumstances require it; this has, however, but seldom been necessary of late years. Public treatment gives the sanitary authorities wide powers to take special measures for isolation of the patients and requisition of localities, etc. The statute for epidemics contains special provisions for typhoid fever, paratyphoid fever, diphtheria, scarlet fever, epidemic cerebro-spinal meningitis and acute poliomyelitis. In this paper, when the term "epidemic disease" is used, one of the above will be intended.

I. SANITARY AUTHORITIES.

The measures against epidemic disease are placed in the hands of local epidemic committees¹, of which there is one to each jurisdiction, which in the majority of cases corresponds to a District Medical Officer's (*Kredslæge*) area. The population of these districts varies a good deal, the average being rather over 40,000 inhabitants.

In the country districts, the local epidemic committee consists of the Chief Constable, who is chairman, the District Medical Officer and three members elected by the county council for three years. In the towns, the local epidemic committee coincides with the health committee of the town; should the Chief Constable or the District Medical Officer not be a member of the health committee, they will attend when

¹ Epidemikommision.

as the epidemic committee. One medical man or more may be added to the board in cases of greater epidemics. These as well as the District Medical Officer are called Epidemic Medical Officers.

Supreme supervision over all the epidemics of a county is given to a county epidemic committee¹, consisting of the County Commissioner as chairman, the County Medical Officer (*Amtslægen*) and three members elected for three years by the county town councils.

Supreme authority in epidemiological matters is vested in the Ministry of Justice and by the National Board of Health.

The management and responsibility rests in the first instance on the local epidemic committee. The members elected as representatives of the people, who have the power of the purse, are, as has been seen, in a majority over the two officials. The Chief Magistrate is chairman because he, being under the Minister of Justice, under whom all police matters are placed, represents the police, who have authority, in case of need, to carry through the claims of the epidemic statute. Infringement of this statute is punishable by imprisonment or fines, and the cases are tried as public police cases.

According to the statute, the whole board acts as an executive authority; but in special cases the head officer of police may take the necessary measures when the District Medical Officer approves. As a rule, co-operation in the board is so good that the District Medical Officer has the authority in everyday cases transferred to him, but he constantly keeps the board informed as to all that occurs.

The responsibility for the provision of the necessary number of hospitals with medical attendants, nurses, disinfectors, etc., thus rests with the epidemic committees, and in the larger towns have their own municipal epidemic hospitals. As far as the country of the towns and country districts are concerned, it comes more natural to concentrate the beds for epidemic diseases in single hospitals within the district corresponding to the jurisdiction of the county epidemic committee, and thus in most cases excellent hospitals shared by both town and country have been erected.

The county epidemic committee assumes responsibility in the case of greater epidemics, especially for public treatment, also when a co-ordination of the individual epidemic committees is concerned.

It will thus be seen that the execution of measures against epidemics is, in Denmark, decentralised to a very high degree, which corresponds to the highly developed self-government, also that the central authorities, the Minister of Justice and the National Board of Health, but seldom have occasion to interfere, and even then, as a rule only in a supervisory or directive capacity.

II. PRACTICAL MEASURES.

- Recognition of contagious individuals. (Notification and diagnosis.)
- Isolation of contagious individuals.
- Destruction of other possible centres of contagion.

¹-Epidemikkommission.

1. Notification.

(a). As far as the “ *dangerous* ” diseases are concerned, every person, who has reason to suppose that any member of his household is suffering from such a disease, must immediately report the same to the police, who thereupon notify the epidemic board which, if necessary, sees that medical assistance is called in.

Every medical man who has such a patient under treatment must, even if the case is mild or abortive, immediately notify the case — upon a special form — to the Epidemic Medical Officer and to the National Board of Health.

(b) *Other contagious diseases.* Every medical practitioner must send in weekly to the District Medical Officer a report, drawn up on special forms, respecting the cases observed by him in his practice. (For further information see Dr. H. F. Hansens article : “ *Danish Medical Statistics* ”.)

Should a medical practitioner have a case of typhoid fever, paratyphoid, paratyphoid, dysentery, diphtheria, scarlet fever, cerebro-spinal meningitis or acute poliomyelitis under treatment in a school building or in a house in which there is a milk shop or other sale of provisions, he must at once report the same to the Medical Officer (*Kredslægen*).

Should such weekly reports appear insufficient to the sanitary authorities, the National Board of Health (*Sundhedsstyrelsen*) or the Medical Officer are empowered to require every practitioner to send in at once the so-called “ notification form ” with the patient's name and address in every case of the disease in question.

At certain periods these notification forms have been required in acute poliomyelitis, cerebro-spinal meningitis, lethargic encephalitis and others.

Practice has proved that the sanitary authorities in the way described above have great facilities for following the progress of epidemics. The fact that the Medical Officer is himself as a rule a practitioner causes him to come directly in touch with the contagious diseases within his own sphere of observation. By his contact with his colleagues he is also generally able to keep himself acquainted with the course of the epidemic.

In all cases where a contagious disease spreads, for instance, in a water or milk epidemic, it is the duty of the District Medical Officer (*Kredslægen*) to keep the National Board of Health (*Sundhedsstyrelsen*) informed.

The diagnosis of these diseases is facilitated in various ways : partly by the legally authorised right to gratuitous admission to hospital, even in abortive or doubtful cases (it is evident that the best possible conditions for arriving at a correct diagnosis are to be found in a hospital) ; partly by the bacteriological and serodiagnostical examinations now at our disposal.

Most of the epidemic hospitals have stations for the diagnosing of diphtheria and typhoid fever. Besides these, the State Serum Institute in Copenhagen serves as a central station for the whole country for all other investigations. As the post to this institution only takes one night, and as the answer can, if necessary, be sent either by telegraph or telephone, this arrangement ensures a sufficient security for rapid diagnosis. All these examinations are gratuitous.

In cases where death is suspected to have been caused by an epidemic disease, the epidemic board is empowered to require closer investigation and post-mortem examination, should this be considered necessary to decide whether or not "public health" should be instituted.

2. Isolation of the Sick.

n the majority of cases this is carried out in a public hospital.

If the disease is being treated at the public expense the epidemic committee can order a removal to hospital unless the patient can be isolated in his own home in a perfectly satisfactory manner. In all cases patients are bound to follow the committee's orders as to isolation, disinfection, etc., and when admitted to hospital cannot leave before being discharged by the committee.

The ordinary epidemic diseases are, however, only quite exceptionally brought under "public treatment". For them the regulation enacts that all persons who are foreigners or naturalised subjects, who have for some years resided in the country or have been in Danish vessels, and, further, that all persons who are members of authorised benefit clubs (*Sygekasser*), and their children under fifteen years of age (including step-children), can, on the declaration of a medical man, be admitted to the municipal public hospital when they suffer from typhoid fever, paratyphoid, paradysentery, cholera, scarlet fever; epidemic cerebro-spinal meningitis or acute poliomyelitis requiring compulsory treatment.

condition, however, for gratuitous treatment is that the removal to hospital place *immediately* on the appearance of the disease, or as soon as its existence is ascertained by the medical attendant, also that the patient remains in hospital until discharged by the medical man. In the later phases of the disease, the patient can only be admitted for gratuitous treatment on the order of the epidemic committee. This is only in cases where the committee deems it specially desirable to isolate the patient, in order to prevent the spread of contagion.

Patients with other epidemic diseases can be admitted to the hospitals for special treatment when the municipal council concerned considers it desirable. For the sanction of the Minister of Justice is required. This has been the case, for instance, in local epidemics of epidemic jaundice.

the last great epidemic of *influenza*, which since 1890 has been notifiable in this country, instead of the provisions of this law an article of the Poor Law was inserted, by which authorisation for the health authorities was obtained to admit free medical treatment (including the transport) of influenza patients, without this being considered parish relief. This measure was applied to a very great extent, and a great number of provisional epidemic beds were procured by the use of Doecker-barracks and public and private premises.

This gratuitous treatment includes cases where the patient has been erroneously
ed to suffer from the disease in question, or where the disease first appears or
gnised whilst the patient is in hospital.

On the other hand, the epidemic statute gives no title to gratuitous treatment *velæ*, for instance, deformities after poliomyelitis.

Mothers with children at the breast can be admitted gratuitously to hospital even if only the mother alone or the child alone is attacked.

These regulations have proved most efficacious. The intention of gratuitous treatment when removal to hospital takes place immediately on the appearance of the disease is, of course, to hasten the isolation of the patient as much as possible ; he must remain in hospital as long as there is a possibility of contagion. Regarding carriers see below.

Gratuitous treatment also includes the transport of the patient to the hospital.

3. *Carriers of Infection.*

The statute gives facilities for taking the necessary measures with regard to persons who from some or other cause may be considered communicative of infection, including the actual carriers of the bacilli.

(a) *Recognition of the Carriers.*

As far as these are concerned, the local epidemic committee can cause such bacteriological or other such investigations to be made as are requisite for fixing the nature of the disease or deciding whether apparently healthy persons are carriers.

The committee in such cases, however, may only act on their own account with the person in question gives his absolute consent. In the opposite case, the consent of the National Board of Health (*Sundhedsslyelsen*) must be obtained before the local committee can take decisive steps. It is in this case incumbent upon the person in question to give the investigators the opportunity to obtain the material necessary for the investigations. If it is considered necessary, they can be placed under observation in suitable places, which in practice is almost always a hospital. Compulsory measures in such cases have, as yet, never been made use of, as it has always been possible to arrive at a voluntary arrangement.

(b) *Provisions.*

It is incumbent upon everyone, who for one or other cause may be supposed to be a carrier and who is ordered by the medical attendant or the local epidemic committee to submit to cleansing or disinfecting either of person or things and also to observe other precautions, to closely follow these injunctions. The local epidemic committee can enjoin persons, known to be carriers, whose occupation involves a danger for the spread of infection either in case of a contagious disease appearing in a member of their household or from other causes, to discontinue their occupation until they produce a proper medical certificate that they can no longer be considered as carriers. They are entitled to a gratuitous certificate from the epidemic officer ; a certificate can also be drawn up by another medical man, but in this case it must be paid for. Should this injunction be neglected, the person in question can, if necessary, be removed to a hospital for observation. Persons upon whom the injunction is laid can claim compensation for the losses they thereby suffer. If a bacillus carrier removes to another medical district, the Medical Officer of this district must be informed, and the District Medical Officer himself must, as far as possible, keep himself informed of the residence

When a patient and, if he moves, inform the Medical Officer of the district to which he goes.

These regulations in reality give the sanitary authorities very extensive powers for taking measures against "carriers" of these epidemic diseases. An endeavour has been made, however, in accordance with the whole spirit on which epidemic legislation is based, to avoid as far as possible the use of compulsion and to endeavour to obtain voluntary acquiescence.

The National Board of Health has given the Medical Officers certain directions in this respect but no fixed rules, as it is considered desirable that they should be able, if possible, to act in these difficult matters according to each individual case.

Carriers of *typhoid bacilli* are, of course, the most important. In order to recognise them, it is required that before a patient with typhoid fever is discharged his urine and excrements must have been found free from bacilli on three consecutive examinations. Should the excretions continue to contain bacilli and the patient no longer able to remain in hospital, during the latter part of his stay in hospital he is taught the necessary precautions to take; the Medical Officer of the district to which the patient is sent must also be informed. The District Medical Officer will then look after the patient in question and see that the instructions given are carried out as far as possible. A carrier of bacilli has the handling of provisions, especially milk, he is, as a rule, ordered to seek some other occupation. If it is considered necessary, a reasonable compensation may be given.

The Medical Officers keep a list of the typhoid bacilli carriers in their districts and, as a rule, of all patients after typhoid fever discharged from hospital, as it is well known that three examinations are not sufficient to ensure that a patient will not afterwards prove to be a bacilli carrier. At the present moment about 30 such carriers are known in this country.

4. *Disinfection, etc.*

The local epidemic committee can require the disinfection of the bedding, wearing apparel and residence of patients and carriers of infection. It must be carried out according to regulations drawn up in the Ministry of Justice and by especially qualified persons. Disinfection is gratuitous; should any appreciable damage be caused thereby, compensation is given. If necessary, the committee can require the inmates to remove from infected dwellings until they are cleaned and disinfected; compensation is given for loss suffered.

Measures of other kinds can be taken if deemed necessary for the prevention of infection, for instance, the extermination of rats.

Disinfecting furnaces are to be found as a rule in the epidemic hospitals. Formalin is now almost always used in the disinfecting of dwellings. There is, however, an increasing tendency to depart from the disinfection of dwellings in the great majority of diphtheria and scarlet-fever cases which are removed to the hospital immediately on recognition of the disease, as it is assumed that the virus is kept up very much more by the persons about the patient than in the dwelling.

When "public treatment" comes into action, the committee is empowered to take measures for the remedying of defective drainage, bad drinking-water, etc.

Trains, passenger ships, omnibuses, diligences, etc., must not be used for transport of patients, unless the rules laid down for such use are observed. After the necessary disinfection must be carried out.

5. *Special Measures respecting Milk and Food Infection, Schools, Order of Isolation*

(a) *Milk and Foodstuffs.*

Owing to the large number of dairies throughout Denmark, special measures have been taken for the prevention of milk infection. Should any person, resident or employed in a house in which there is a dairy or milk shop, suffer from a contagious disease or be a carrier of infection, the epidemic committee can, until such time as the danger of infection is precluded, prohibit the sale of milk, whey or other dairy products from the dairy or shop, or can permit such sale only under the observance of such precautions as the committee may deem necessary. The committee can, if it considers it right, prohibit all supply of milk to the dairy or milk-shop from other premises.

Compensation is given to the owner or owners of the dairy or milk-shop, also to the purveyors of milk, for losses ensuing from the above enactments.

The taking of milk from premises, where infectious diseases have appeared, where there are carriers of infection, can also be prohibited until such time as the necessary measures have been taken for preventing the danger of a spread of infection. Compensation is given for possible loss.

Should there be a well-grounded suspicion that cases of the disease are due to milk brought from premises outside the committee's field of action, the committee can provisionally prohibit the supply of the milk, granting compensation to the person on whose question for loss suffered. Information as to the measures taken in this respect must be immediately sent to the committee of the district in which the premises lie.

Businesses from which other foodstuffs are supplied are subject to the same prohibitions should the local epidemic committee deem them necessary with regard to foodstuffs in question. Compensation in such cases is also eventually given.

These regulations are of the utmost importance in a country like Denmark with its numerous dairy-centres, which necessarily represent a great danger for the diffusion of infection through the milk, and where more or less wide-spread epidemics of scarlet fever, diphtheria, typhoid fever and paratyphoid fever in this way now and then arise.

Owing to the very considerable pecuniary interests involved, there would be a temptation to conceal cases of disease among the employees who have to do with the milk if the statute did not ensure full compensation for losses incurred. Experience shows also that, as a rule, the measures are carried out without difficulty.

In the majority of cases matters are arranged so that after isolation, disinfection, etc., have been carried out the milk is allowed to be sold boiled, until it may be assumed that all danger of infection has ceased.

When the disease is not under " public treatment ", the sanitary authorities have no right to require the removal of the patient to hospital. But even under such conditions, the epidemic committee will almost invariably be able to obtain this measure owing to the fact that they are authorised to prohibit all supply of milk from the infected estate and let compensation depend upon the removal of the patient. This economic pressure is practically always successful.

Schools.

When cases of the above-mentioned epidemic diseases appear in a household, in which there are children who attend school, it is the duty of the medical attendant to report the case to the school. The children in question are not allowed to attend the school until they can produce a medical certificate that they can no longer be considered as conveying infection. Should an epidemic disease appear in the household of a teacher, he must keep away from the school until he can produce a medical certificate that he is no longer considered to convey infection.

More particular rules respecting school matters are given in special decrees from the Ministry of Education. The persons in question are entitled to get gratuitous certificates from the epidemic officer.

The local epidemic committee is empowered in cases of epidemic, including diphtheria, cough and measles, to close public and private schools, both in its own and in neighbouring communes. Compensation is given to private schools when they are kept closed provided there is loss of income.

Should one of these diseases appear in any person residing in a school building, the epidemic committee can require the removal of the person in question to hospital for gratuitous treatment.

Further, the local epidemic committee can close children's and infants' homes.

Should it be necessary, during greater epidemics, under treatment at public expense, to requisition private or public premises in order to find room for more beds, it is only possible to make use of schools when attendance has ceased or has been temporarily suspended to another school building ; in country districts only in such cases where no suitable premises are obtainable.

Isolation of Districts, Prohibitions, etc.

The Minister of Justice can, when a disease is under treatment at public expense, order the isolation of the whole infected district. This regulation has, however, never been put into force.

The local epidemic committee can forbid all funerals and public meetings and close places of amusement where many persons collect together, both in its own and in neighbouring districts.

6. *Public Control of Scabies.*

Somewhat outside the scope of epidemic legislation are provisions for gratuitous treatment of scabies.

Such patients, whether they can afford to pay for their treatment or not, are entitled to gratuitous treatment. This also holds good for aliens as temporary labourers and such like. They are indeed bound to undergo such a cure, unless they can show that they are under proper private medical treatment.

The local epidemic committee has to see that everything is in order for the carrying out of these provisions.

No payment may be demanded or received from patients either for treatment or disinfection.

Should a patient withdraw from treatment before the committee considers it finished, he must refund expenses, and the board can, eventually, distrain for payment.

In most cases the patient will be treated as an out-patient at a hospital, or at a brief sojourn as in-patient whilst his linen and outer garments are being disinfected. By degrees the latter is considered as superfluous, and experience shows that disinfection of the bed-clothes is unnecessary. The number of patients suffering from scabies has decreased somewhat of late years.

III. EXPENSES IN THE TREATMENT OF EPIDEMIC DISEASES.

The fundamental rule is that all such expenses should be borne by the public, as it is as much in the interest of society as well as of the individual patient that infection should be kept within the narrowest possible limits.

It has already been mentioned that all preparatory work, provision of hospital medical men, nurses, disinfection, means of transport, etc., are communal matters, and all the expenses connected with the same are defrayed by the communes. When it is a question of public treatment, as in cases of greater epidemics, responsibility according to the statute rests with the epidemic committees, but the communes pay the expenses. Should the space in the hospital prove insufficient, the commune, as a rule, endeavour to borrow one or more portable huts (*Doeckerbarracks*) belonging to the Ministry of Justice on payment for transport and repairs.

Working expenses, that is, the treatment proper, disinfection, transport, and so on, is divided between State and commune, according to rules which differ in order and "public treatment".

The cost of "public treatment", such as the epidemic committee's office expenses, fees to epidemic officers, cost of provisions made by the local epidemic committee, disinfection, of medical treatment, removal to hospital, cure, nursing and medical attendance is defrayed *half by the State and half by the communes*.

In the majority of cases, where it is a question of ordinary gratuitous treatment of the ordinary contagious diseases, the expenses are paid *three-fourths by the State and one-fourth by the patient's parish*. As the State has to support so large a proportion of the expenses, it has reserved the right to control the regulations of the epidemic hospitals, all of which have to be approved by the Ministry of Justice in conjunction with the National Board of Health. A patient suffering from one of the above diseases is,

le, removed to the nearest epidemic hospital and the commune of residence pays expenses in advance. The hospital must immediately notify the commune where the patient is entitled to parish relief, and give the necessary information. Later on, the commune where the patient has his residence will have its expenses refunded three-fourths by the State and one-fourth by the patient's own commune).

The epidemic committees, after discussion with the patient, send up their report concerning the amount of *compensation* referred to in this Statute to the county epidemic committee, with which the final decision lies. Questions relating to the amount of compensation cannot be brought before the Courts of Justice, but the person in question can, if he is dissatisfied with the sum allowed him, demand an assessment by two impartial men appointed by the court.

Further, the question whether the statute authorises compensation can be brought before the courts.

In reality, these questions of compensation have given rise to but little disagreement.

The sums paid by the Exchequer for expenses in the treatment of epidemics were, in the financial year :

1921-22.....	2,566,000	kroner.
1922-23.....	2,769,000	»
1923-24.....	2,343,000	»

IV. SMALLPOX VACCINATION.

Vaccination has been compulsory in Denmark since 1810.

The Vaccination Statute of April 2nd, 1871, which is still in force, prescribes that everyone who has not had smallpox must be vaccinated before he is seven years old. Under this decree there is no dispensation, but the Chief Constable can grant a postponement if a physician deems it advisable for the child's health. If the order for vaccination is not complied with, the parents are liable to be fined. There have been a few feeble attempts at an anti-vaccination movement, but they have never thrived in this country.

Control takes place principally through the schools. Public and private education is compulsory in Denmark and begins with the seventh year. No child can be admitted to any school unless it has a certificate of vaccination. In consequence, vaccination is in reality compulsory in this country and, practically speaking, every Dane is vaccinated against smallpox.

The great majority of vaccinations take place by inoculation at public expense and are always performed by medical men.

In Copenhagen there is access once a week to gratuitous vaccination in a State institution (the Royal Vaccination Institute) or in one belonging to the municipality. In the provincial towns, vaccination at public expense takes place twice annually, in spring and autumn; in the country districts once annually. It is performed by the District Medical Officer (*Kreds-lægen*), on a plan approved by the County Medical Officer (*Amtslægen*). The persons vaccinated are inspected about a week after inoculation and receive then a certificate for vaccination against smallpox, drawn up on a form prescribed by the Ministry of Justice.

The District Medical Officers send in reports of the results.

As a rule, children are vaccinated when two years of age, but latterly there has been a tendency to postpone it.

Revaccination. — Any person desiring it can be revaccinated at public expense.

The National Board of Health brings a certain pressure to bear for the revaccination about every seventh year of medical men, nurses, disinfectors, persons who come in contact with alien temporary labourers, the employees in rag factories, and so on.

Revaccination is compulsory for all conscripts.

In face of a threatening epidemic of smallpox, the chief officer of police, at the request of the Medical Officer, orders everyone, who has not had smallpox or has not been vaccinated, to be vaccinated at once; further, the epidemic committee, in accordance with the epidemic statute, has the right of ordering revaccination if it seems desirable.

The vaccine is prepared in the State institution: "The Royal Vaccination Institute." Calves are employed and the quality of the vaccine is excellent. The vaccine "takes" in 99 per cent of vaccinations performed by the Medical Officers. The vaccine is supplied gratuitously to Medical Officers and private practitioners.

V. QUARANTINE LEGISLATION.

Danish quarantine legislation for the prevention of the introduction of contagious diseases into the country, especially from ships, treats principally of two of the diseases, plague and cholera, which are included in the International Sanitary Convention. The latest quarantine statute dates from November 11th, 1911. (Translated into French, Bulletin de l'Office international de l'Hygiène publique, 1911, page 1,934.)

1. *Authorities.* The authorities who supervise the measures under the quarantine statute are:

In Copenhagen, a quarantine board, consisting of the head customs inspector who is chairman, one of the burgomasters of the town, the Superintending Municipal Medical Officer (*Stadslægen*) and the harbour-master.

Under them are four quarantine Medical Officers, appointed by the Ministry of Justice and paid by the State.

In the provincial ports there are also quarantine boards, consisting of the chief officer of police, who is chairman, the principal customs officer in the place and the District Medical Officer (*Kredslægen*). In places where there is no District Medical Officer, another medical man is appointed by the Ministry of Justice.

Outside the ports quarantine supervision is carried on by the customs office assisted by the District Medical Officers.

Breach of the quarantine statutes is punishable by fines and imprisonment.

2. *Practical Measures.* It is the principal duty of the quarantine authorities to see that no ship coming from abroad, except in cases of urgency, has any communication with the shore before it has received a written permit — the so-called "bill of intercourse" — and to see that the ship is, if necessary, submitted to medical inspection.

The "bill of intercourse" is obtained from the quarantine board in the towns and through the customs officers elsewhere.

The cases may be classified under three heads according to the information the quarantine officers receive from the captain of the ship :

(a) The ship has not touched at any port which has been declared by the Danish authorities as infected by any of the diseases which come under the quarantine statutes. The captain must, on a special form, declare that no person on board is suffering from any contagious disease, also that there is no corpse of any person who may be supposed to have died of such a disease.

In this case a "bill of intercourse" is given.

There are special regulations, however, if there has been unusual mortality among rats in the ship or *rat-plague* has occurred. In these cases, the Medical Officer must be consulted, and the ship is treated as "suspected" or "infected".

(b) The ship does not come from any infected place, but has cases on board of contagious diseases that do not come under the quarantine statutes. In such cases the Medical Officer is at once called in, the ships indeed often endeavour to do this themselves by furling the quarantine flag.

In such cases measures are taken in accordance with the epidemic statutes. The "bill of intercourse" is not given until the necessary precautions against the spread of infection have been taken.

With regard to mortality among the ship's rats, the same holds good as mentioned under (a).

(c) The ship has touched at ports which the Danish authorities have declared infected with plague or cholera.

In such cases the regulations of the quarantine statute as to special measures come into play. These, however, coincide so strictly with the regulations laid down in the International Sanitary Convention of 1912, to which Denmark has agreed, that there is no occasion to enter into further particulars.

These measures, in the first instance, come into force in cases of plague and cholera, and the Minister of Justice can, after consultation with the National Board of Health, apply them against yellow fever, dysentery, typhus and smallpox. Should other contagious diseases appear with especial virulence, corresponding measures may be put in force against them by royal decree.

Notices as to what places are to be considered as infected are issued by the Minister of Justice according to the official communications it receives under the Paris Convention. Notice is given as to which of the statutes regulations is to be put in force. These differ according to whether they concern cholera (measures against infection through water) or plague (rats). The Ministry of Justice also gives notice when the regulations may cease.

For the isolation of patients with the above diseases arriving by sea, satisfactory completely isolated premises are provided in the seaport towns. In Copenhagen, Eresundshospital is used for this purpose. After the cholera epidemic in Hamburg, special isolated small quarantine homes were erected in the seaport towns and these a number still exist, but as there never has been any use for them they will by

degrees be given up and patients will be sent to the epidemic hospitals where there are departments which, if necessary, can be isolated from the rest of the hospital.

It has not been considered necessary to erect a special quarantine establishment but the Danish State has signed an agreement with Sweden by which all plague-infected ships bound for Danish ports have the right of touching at the Swedish quarantine station in Käsö, near Göteborg, for quarantine treatment at the expense of the Danish State.

The statute gives the Ministry of Justice power to order the *extermination of rats* in ships arriving in the harbours and also in the harbours themselves. Special mention is here made of measures taken in the harbour of Copenhagen. (Decree of October 6th, 1919, as to the Extermination of Rats in Vessels arriving in the Harbour of Copenhagen from Foreign Places, translated into French in Bulletin de l'Office international d'Hygiène publique, 1922, page 1,157). According to this decree every ship arriving in the harbour of Copenhagen has to be searched for rats and, should any be found, they must be exterminated.

Liners are to be searched every third month and the rats exterminated.

The carrying-out of these measures, which by-and-by will be applied to all important ports, rests with the quarantine board. The examination takes place without cost to the ship, which, however, has to pay for the extermination of the rats.

The captain of the ship has a right to receive a gratuitous certificate that the measures have been carried out.

The expenses of the quarantine measures. The communes bear the expenses of isolation premises. The State defrays all the other expenses of the sanitary measures decreed by the quarantine Statutes, treatment, maintenance, burial, etc.

If the question is asked whether this legislation has attained its purpose, the answer must be in the affirmative.

The main idea is that the public bear the cost of the treatment of infectious diseases and that measures taken against them are decentralised and, to a great extent, in the hands of the people themselves.

The sense of public hygiene is steadily on the increase in the Danish people. It has shown itself, during the last 30 years, as far as epidemics are concerned, in the erection of a great number of epidemic hospitals all over the country, so that it may be reckoned that there is one epidemic bed per 1,000 inhabitants. Until the difficulties in the way of building during and after the war interfered, there was a praiseworthy competition between the different parts of the country to make the hospitals as good and up to date as possible. This has been influenced by the inclination to send the sick to hospital; whilst in the 'nineties there was a general reluctance among the people to remove patients to hospital (which at that time was probably a result of

at epidemic of diphtheria, death being then often the end of a stay in hospital) ; case is now quite otherwise. In the great majority of cases removal to hospital is looked upon as a matter of course (in 1922, 88 per cent of all reported cases of diphtheria were treated in hospital). This inclination is encouraged not only by the excellent nursing, but also by the easy access to hospitals by bicycle, motor-cars, and so on ; moreover, the medical men do not deny the parents access to the patient but as far as possible facilitate it. The hospital is thus no longer looked upon as a closed place in which there is no admittance except in the utmost need.

The sanitary authorities receive most excellent assistance from the general practitioners who, in all points, act as the Medical Officer's willing helpers. Every Danish medical man considers it his duty to assist in improving the public hygiene. The help of the Press is also of great value. The Danish Press of all political parties, not least the Press which represents the less fortunate members of society, is ever on the alert where there is a question of hygiene, and helps to point out hygienic evils and to support the demands of the sanitary authorities.

THE STATE SERUM INSTITUTE

BY DR. TH. MADSEN.



THE STATE SERUM INSTITUTE.

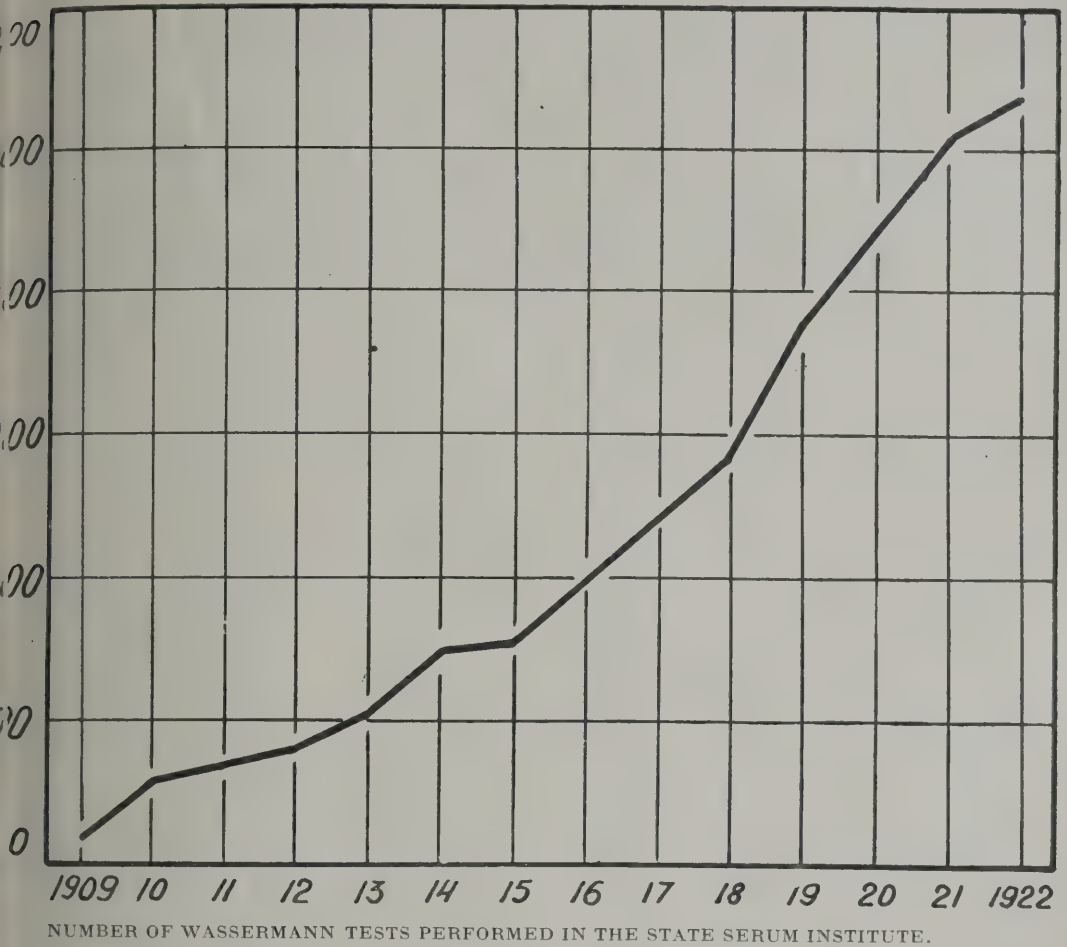
The State Serum Institute was erected by the Statute of March 20th, 1901. Its purpose was the production of antidiphtheritic serum for the use of the Danish medical practitioners and hospitals, also the scientific investigation of questions relating to immunity. Later on, however, by the Statute of April 1st, 1910, it was enlarged so as to become the central epidemiological institute for the whole country. Its purpose is now, besides the production of various therapeutic sera and vaccines, to undertake diagnostic bacteriological and serological investigations.

The institute, which is under the Ministry of Justice and the National Board of Health (*Sundhedsstyrelsen*) is conducted by a director, who is also the adviser of the board in all epidemiological and bacteriological matters. The work of the institute falls into two departments :

1. The *Serum Department*, which is conducted by a superintendent with one laborator and three assistants, all chemists.
2. The *Diagnostic Department*, at the head of which is a superintendent with one laborator and six assistants, all medically trained. In the office there are three clerks and in the laboratory six female assistants ; furthermore there is a stableman, a watchman, a porter and about twelve male helpers.

The Serum Department : The principal business of the serum department is the preparation of therapeutic sera, first of all diphtheritic serum. This is sent direct to the hospitals and medical men. A small sum is taken for the preparation (50 øre for 4,000 immunity units) to cover postage, packing, etc. It is supplied free of cost

poor. Tetanus serum and meningococcus serum are also prepared and, in lesser quantities, pneumococcus, streptococcus and other sera. Vaccines against typhoid and cholera were also made in large quantities during the war. Auto-vaccines against staphylococci, colibacilli, etc., are also prepared.



The Diagnostic Department. The object of the diagnostic department is bacteriological and serological investigations for the recognition of contagious diseases, discovery of carriers of infection and so on, in cases which would be difficult to treat factorily in smaller laboratories. The post reaches the institute in the course of night from all parts of the country, which facilitates this centralisation. Despatches off in the evening reach the institute the following morning. If necessary, replies are sent by telephone or wire. Further, all serological examinations of syphilis are exclusively performed in the institute, which has proved of great importance in obtaining uniformity of results.

This has made possible the institution of a special card-index for syphilis pa (mentioned in Dr. Trydes' article on venereal diseases). Investigations of excre and urine for typhoid, paratyphoid and other intestinal bacteria are mainly perfor in the Serum Institute. Investigations for tubercular and diphtheria b meningococci, Widal's test, are carried out partly in the Serum Institute and part series of hospital laboratories throughout the country, which are in constant with the Institute.

The Serum Institute is probably the only place where examination for who cough bacilli is carried out according to routine method. By this means diag can be determined in the majority of cases already in the catarrhal stage of the di

In accordance with the principle, which holds good in Denmark, that all mea against epidemic diseases, venereal diseases and tuberculosis are taken at the expense, the preparations made at the Serum Institute are supplied gratuit to patients; and diagnostic investigations are free of cost.

The expenses are defrayed partly by the State and partly by the comm

The following figures give an example of the work performed in the Ins during the past year :

	Number of Portions of Diphtheritic Serum à 4,000 I. U.	Number of Wassermann Tests.	Number of Widal Tests.	Number of Whooping-C Tests.
1907	9,183		268	
1908	11,009		651	
1909	13,243		553	
1910	10,862		664	
1911	14,322	5,967	625	
1912	13,712	6,411	511	
1913	10,065	7,718	591	
1914	9,509	11,256	700	
1915	9,590	14,977	954	39
1916	12,006	16,644	1,199	361
1917	11,346	20,328	1,488	179
1918	15,331	41,134	1,438	164
1919	20,277	29,462	1,386	722
1920	38,717	38,129	1,281	319
1921	73,025	43,772	1,473	231
1922	81,191	51,561	2,602	1,694
1923	53,496	54,435	2,269	1,060

The State Serum Institute acts as Central Laboratory for the Health Comm of the League of Nations in questions concerning the standardisation of the therape sera and serological reactions.

Reports of the scientific work of the Institute are given in "Communicat de l'Institut sérothérapique de l'Etat Danois", Vol. I-XIV.

THE COMBATING OF TUBERCULOSIS IN DENMARK.

BY J. OSTENFELD AND G. E. PERMIN.

The combating of tuberculosis in Denmark goes back to a very early date. Chiefly thanks to Professor *Sophus Engelsled*, the medical science of this country early became aware of the fact that this disease can be prevented and treated successfully. The fact that Denmark as early as 1875 got its first seaside hospital for children (at Refsnæs) devoted for the treatment of scrofula and surgical tuberculosis is likewise due to him. This hospital to this very day affords excellent accommodation and gives general satisfaction.

The next step of importance was the passing of the bills in 1893 to prevent the spread of tuberculosis from cattle. In 1898 these bills were replaced by the Combating of Tuberculosis among Cattle and Pigs Act, a statute of more extensive scope, by which the State provides grants-in-aid for the stamping-out of tuberculosis among cattle on the various farms by means of tuberculin injections according to Professor *Bernhard Bang's* method. Cows suffering from tuberculosis in the udder are killed, and the owners are to a certain extent indemnified for the loss; milk and buttermilk must not be distributed from a dairy for the feeding of animals till it has been pasteurised. This was also due to *Bernhard Bang's* pioneer investigations of tuberculosis among cattle in Denmark. Denmark was the first country to start a systematic campaign against tuberculosis among cattle by means of diagnostic tuberculin injections (1893).

In 1896, the year after *Niels R. Finsen* recorded his first lupus-case cure by light treatment, Finsen's Medicinske Lysinstitut, which was later on to become so largely and well known, was established. The Institute now acts not merely as a centre for the treatment of lupus patients from the whole country, but also to a large extent carries out light treatment of other forms of tuberculosis (larynx, bones, joints, etc.), and at the same time the leading institution for the scientific investigations of the diseases of light and its employment in applied medicine. In the same year the first special sanatorium for children suffering from scrofula was opened at Hellebæk on the initiative of the association "Børnesanatorierne for København og Omegn" (Children's Sanatoria for Copenhagen and its vicinity), founded by *Mrs. Harboe*, widow of General Harboe.

In 1897, a supplementary provision was added to the existing Epidemic Act to the effect that deaths due to pulmonary tuberculosis shall be notified and that in the case of deaths resulting from this disease disinfection may be undertaken at the public expense. Denmark was therefore the first of the Scandinavian countries to institute compulsory notification of tuberculosis.

At the end of the 'nineties, the Danish medical profession started a comprehensive educational campaign by distributing pamphlets, posters, etc., thereby arousing wide interest in the combating of tuberculosis. On March 1st, 1900, on the initiative of Professor *Chr. Saugman*, the first Danish Sanatorium for Consumptives, Vejlebjerg Sanatorium, was opened; it is intended for well-to-do patients. Eighteen months later the first National Sanatorium for Consumptives, Boserup at Roskilde, was erected;

it is owned by the municipality of Copenhagen, which has always shown great keenness in the promotion of any scheme connected with hygiene and the general health of the public.

The institution of "The National Association for the Combating of Tuberculosis" proved of the greatest importance in the general and organised combating of tuberculosis. It was founded on January 16th, 1901, on the initiative of two medical men, *H. Rørdam* and *Carl Lorenzen*, backed by a large following of politicians and medical men. The Association first set itself the task of spreading information about tuberculosis as a national scourge, and by an able and energetic campaign succeeded in creating a strong and general feeling in this matter. To obtain the sums with which the Association was soon endowed, it immediately took practical measures, and it is since under an able administration constantly taken the initiative in all improvements. As an instance of the energy with which the Association acted, before the end of 1903 the national sanatoria were ready for the admission of patients, *viz.*, the sanatorium for males at Silkeborg and two smaller sanatoria for females at Ry and Haslev.

It was due to the feeling created by the work of the National Association that the Government on November 18th, 1901, appointed a commission to investigate the State, by legislation and suitable grants-in-aid, could support this campaign against tuberculosis. Before the end of the following year the commission, the work of which was presided over by Professor *Knud Faber*, was able to make a comprehensive and valuable report, including legislative proposals. On the basis of this report, the Danish Tuberculosis Acts were worked out, being passed by the Rigsdag on April 14th, 1905. The passing of these Acts signify the greatest event in the campaign against tuberculosis in Denmark. They are the framework and basis of the comprehensive and expensive measures which, during the following years, were rapidly introduced and contributed towards the extremely favourable position occupied by Denmark in this matter.

The Acts were amended in 1912, 1918-19 and 1922, but in the main their original form is retained and they must still be regarded as model Acts. Anybody desiring of a more intimate knowledge of the campaign against tuberculosis in Denmark or to study them; they exist in a French translation in the *Office international d'Hygiène publique*, No. 4, 1921, pages 346 and 357, and in a French edition published under the auspices of the National Board of Health. We shall give a brief account of the substance of the Acts.

The Tuberculosis Acts. The perusal of the Acts will in the first line reveal a very considerable pecuniary contribution of the State. The Government grants in-aid for the erection of the numerous institutions for treatment of tuberculosis (hospitals, sanatoria, seaside hospitals, seaside sanatoria, nursing homes, etc.) are themselves worthy of note, but of far greater importance are the large grants for the administration. At present the payment for treatment and nursing in the various institutions is as follows: sanatoria, hospitals and seaside hospitals for tuberculosis, 4 kroner per day; seaside sanatoria, invalid and convalescent homes, 3 kroner per day. Of these amounts the State supplies for the treatment of all patients with the means the following: 3 kroner per day to sanatoria, hospitals and seaside hospitals.

10 kroner to seaside sanatoria, 2.25 kroner to invalid and convalescent homes. State thus pays from three-fourths to five-sixths of the total amount. The term "without means" is given a liberal interpretation. The following benefit from the Government grants-in-aid under these Acts :

(1) Members of State-recognised and sick-benefit clubs and their children under 15 years (about 60 per cent of the total adult population of this country are members of State-recognised sick-benefit clubs) ; (2) patients whose economic circumstances are such that they or their bread-winner, in consequence of the Act of State-recognised sick-benefit clubs, may become a member of such a club ; and (3) patients in such circumstances that their economic conditions or that of their bread-winners would change for the worse should they by their own means defray the total expenses for treatment and stay at one of the institutions.

The subscription by the subsidised patients is very small, *viz.*, 1 krone per day at sanatoria, hospitals, and seaside hospitals, 50 øre at seaside sanatoria and 75 øre at invalid and convalescent homes. This remainder is defrayed by the sick-benefit clubs if the patient is a member of such a club ; if not, he must pay it himself provided he is able to do so. Should he be unable to meet this expense, the duty to pay devolves upon the municipality, without this relief in any way having the character of or involving any of the disabilities entailed by the acceptance of poor relief.

In Denmark, the question of payment does not debar any person suffering from tuberculosis from admission into any of the institutions mentioned in the Act.

The public relief granted for the support of a family during the bread-winner's in hospital or sanatorium is not considered as poor relief (§ 10 in the Act concerning Government grants for treatment of persons suffering from tuberculosis). The "bread-winner" is very liberally interpreted, and includes not only the master of the house but also the mistress. In consequence of this provision, the municipality in the case of destitute persons to keep the family as long as the bread-winners under medical treatment in one of the institutions, and defray the expenses connected with the boarding-out of the children in cases where they cannot or ought not to remain in the home. In the case of destitute persons, the municipality has to provide the patient with clothing during his stay in the institution, to defray the expenses incurred by the patient on his journeys to and from the institution, etc.

As it proved impossible during the Great War and with the high cost of provisions incumbent upon it to administer the various tuberculosis institutions on the statutory grant, both State and municipality granted considerable special subsidies for the payment of the deficits in the working of the institutions, so that the patients have not been charged with any of the added working expenses consequent upon the high cost of living.

Finally, very considerable public grants-in-aid are provided for the State-recognised tuberculosis-stations (dispensaries). To the management of these the State contributes one-third of the expenditure provided that the local municipality contributes the other third, private initiative only having to provide the remaining

third. If a municipality establishes a dispensary, the grants-in-aid of the amount to half the working expenses.

In addition to these comprehensive economic measures, the Acts include a number of detailed prophylactic and hygienic provisions, some of which we give.

In order to secure reliable statistical returns of the incidence of tuberculosis to enable the Medical Officers to keep in touch with the individual cases, notification on a special form is required : (1) of every case of pulmonary and laryngeal tuberculosis by every medical practitioner, and (2) of every death from tuberculosis irrespective of the locality of the disease. On removal or death resulting from tuberculosis disinfection of dwelling, linen and clothing may be undertaken free of charge. Disinfection is not obligatory in Denmark, but the Local Epidemic Committee may, if necessary, order it, thus making disinfection obligatory within its field of activity. In this, as in many others it has been thought best to pursue a course in harmony with the wishes of the population. The measures for preventing the spread of infection from man to man are, of course, of greater importance. In highly infective cases, the Epidemic Committee may order measures to be taken in the home and at the workshop. Should these not be observed, the Committee may order the patient's removal to hospital ; under certain conditions, there may be compulsory isolation. Any man who, during his service in the army, is found suffering from infective tuberculosis, receives treatment at the expense of the State ; infective patients suffering from laryngeal or pulmonary tuberculosis are during their stay in public institutions, such as prisons, mental hospitals, poor-law institutions; old-age homes, children's homes, etc., isolated.

As children are certainly very susceptible to tuberculous infections, a series of provisions have been laid down for their benefit. No woman must go to service as wet-nurse without being in possession of a medical certificate to the effect that she is not suffering from tuberculosis ; persons suffering from infective tuberculosis must not be employed in children's homes, crèches and day-nurseries, etc. ; no private home is allowed to take in children for board without a medical certificate stating that no member of the household is suffering from infective tuberculosis, and if there are children in the home, that the boarded-out child is free from infection.

Various provisions have been laid down for the protection of school children by detailed regulations as to the cleaning of the schools, by excluding children suffering from infective tuberculosis from attending the ordinary schools. It is the duty of both doctors and teachers to notify the authorities should they learn of such cases. The Board of Education has to provide suitable instruction for these children.

To prevent the spread of infection from male and female teachers it has been decided that, if they are suffering from infective pulmonary or laryngeal tuberculosis, they are excluded from appointment in publicly-managed schools. A medical certificate stating that they are not suffering from infective tuberculosis must be procured before applying for these posts. Should they contract the disease later on, they may be dismissed with a pension fixed at two-thirds of their salary, in order to help them on dismissal and away with the temptation to hide their ailment. Should any male or female teacher suffering from tuberculosis contract infective tuberculosis, the doctors are required to send a renewed notification to the authorities concerned, even if the case has

tified in an earlier stage. The State has also taken steps to prevent the spread of tuberculosis in the population from other officials employed in its service and municipal functionaries at their work. This applies to clergymen, district midwives, nursing staffs in the mental hospitals and, under certain conditions, to postmen, line traffic and telegraph staff, etc.; before the appointment of these officials, a medical certificate that they are not suffering from infective tuberculosis may be demanded. Should an official after his appointment contract infective tuberculosis, an investigation of the special conditions under which he has been working is in each case undertaken. Should such an investigation conclude in dismissal, a pension amounting to two-thirds of the salary is granted.

Brief mention should be made of the various provisions concerning tuberculosis in other Acts and regulations. Stringent rules for prevention of bovine infection have been laid down in a series of sanitary by-laws with regard to the treatment of milk; the Bakery Act, persons suffering from infective tuberculosis must not engage in any work connected with bakeries and confectioners'.

In accordance with a memorandum issued by the Ministry of Justice, medical practitioners can, free of charge, have sputum examined in order to verify tubercle bacilli, and diagnosis stations have been established all over the country, where sputum may be sent.

On the basis of these Acts, the combating of tuberculosis has been carried out in Denmark. The development has been so rapid that it may be said that Denmark is now prepared at all points to fight the disease, as will be seen from the following summary of the work.

Tuberculosis Sanatoria. The total number of State-recognised national sanatoria in Denmark is 12, with accommodation for 1,184 patients. They were all built in the course of ten years (1901-11), and the accommodation provided was so ample that they have proved sufficient for the requirements of the country. Besides the national sanatoria there are four private sanatoria chiefly intended to accommodate well-to-do patients; the sanatoria in Denmark afford accommodation for 1,382 patients suffering from pulmonary or laryngeal tuberculosis, preferably in the early stages.

Although the cost of construction of the sanatoria has been kept within very limited bounds, the sanatoria comply with all the demands of hygiene, such as private water and lighting plants (electricity), central heating, w.c., etc. The following proportions are ordinarily required per bed:

1-bed wards :	height 3.75 m.,	floor area 12 sq. m.,	air space 40 cub. m.
2-bed wards :	» 3.75 »	» 8.5 »	» 30 »
Larger wards :	» 3.75 »	» 6.5 »	» 24 »

The majority of the sanatoria are only intended for one sex. Children suffering from pulmonary tuberculosis are treated in a special institution, *viz.* the Julemærke-sanatorium at Kolding Fjord. This sanatorium for children was erected from the sum obtained by the sale of "Julemærket" ("the Christmas stamp", a Danish idea conceived and given a concrete existence by M. Holbøll).

The stay in the Danish sanatoria is of long duration. The patients remain in the sanatoria as long as they are considered to benefit from the stay. The average length of stay is five to six months, but several patients remain for a year or more. This is chiefly because the sanatoria, apart from accommodating all the incipient and early cases, can afford accommodation for many patients in an advanced stage of disease. Only about 20 per cent of male patients of the sanatorium-treated are in stage I, 25-35 per cent in stage II and not less than 45-55 per cent in stage III (Tuberculosis). A somewhat larger percentage of female patients come under stages I-II, but about 33 per cent of these are also admitted into stage III. Tubercle bacilli are found in about 70 per cent of the total number of admitted male patients and in 50-60 per cent of the females. Should relapse occur after discharge from the sanatoria, the patient is in no way debarred from re-admission if renewed treatment would benefit him. The treatment is carried out in all details according to the prescriptions of the doctor. It is not conventional but adapted to the requirements of each individual patient, and every progress in the treatment of tuberculosis is investigated. All the sanatoria are fitted with X-ray plants and light baths in the form of sunlight treatment and various artificial-light baths. The pneumo-thorax treatment is of great importance in the cure of tuberculosis and is frequently employed.

During the latter part of the stay in the sanatorium, great attention is paid to developing the patient's physical strength by introducing work as a link in the treatment. The patient is first offered out-of-door work in garden, field or wood, but much work is also carried out in workshops specially designed for this purpose (carpentry, joinery, binding of books, painting and the like), or occupation is found for the patient in the engine-house of the sanatorium, in the offices of the same, etc.; the females do sewing, domestic work, etc. The working hours range between one and four to five hours daily, and the patients receive no wages for their work, which is exclusively carried out according to the prescriptions of the doctor and solely adapted to meet the requirements of each case. Under the Tuberculosis Acts, it is the duty of the patient to do this work. In other words, the patients complete their convalescence in the sanatorium, an arrangement which has proved so satisfactory that the demand for special convalescent homes has been small.

In Denmark there are the following sanatoria :

(a) *State-recognised* : Boserup (152 beds), Silkeborg (179), Haslev (24), Ry (38), Skørping (138), Faksinge (130), the Sanatorium at Nakkebølle Fjord (126), Spangbjerg (89), Krabbesholm (115), Bornholm (10), Thorshavn, Faroes (25), Julemærke Sanatorium at Kolding Fjord (158).

(b) *Not recognised by the State* : Vejleford Sanatorium (116), Søllerød Sanatorium (50), the Sanatorium in the Rudersdal woods (12), Helsebod (20).

In all 16 sanatoria, total number of beds 1,382.

Tuberculosis Hospitals. While the sanatoria are erected on private initiative with financial assistance from the State, the counties have established numerous tuberculosis hospitals. These are mainly intended for the reception of patients from a limited district, viz. the county, in order that the patients may undergo treatment without being removed too far from their homes. The hospitals preferably admit patients in

ge too advanced to benefit from sanatorium treatment, but in addition they admit ly cases immediately on the recognition of the disease should lack of accommodation prevent the immediate admission of such cases into a sanatorium. The size of the tuberculosis hospitals varies from 10 to 15 up to 20, 30 and 40 beds. The larger towns re larger hospitals ; Frederiksberg has a tuberculosis department with 68 beds, and penhagen receives Government grants-in-aid for the maintenance of about 300 ls. Stringent hygienic demands are made in regard to the construction and uipment of the hospitals.

The required proportions are identical with those at the general hospitals, *viz.* :

Single wards :	height	3.75 m.,	floorage	12 sq. m.,	air space	40 cub. m.
Wards with 2 beds :	»	3.75	»	8.5	»	30
General wards :	»	3.75	»	8	»	30

The number of State-recognised tuberculosis hospitals is at present 30, the beds alling 929. Special tuberculosis departments have also been instituted in three titutions for mentally defective cases and in two mental hospitals. In the State son at Nyborg a special tuberculosis department has been instituted for consumptive soners ; the department includes an open-air shelter where the prisoners may undergo ular treatment.

In the tuberculosis hospitals, about 2,400 patients are treated annually ; many of m receive the entire treatment in the hospital, but some are transferred to a atorium to complete treatment. The extent to which the hospitals discharge ir important function of nursing and isolation institutions is evident from the nsive treatment of advanced cases, the average mortality being about 27 per cent he total patients. The duration of stay in the majority of cases is long ; in many asts for years.

All the hospitals are provided with open-air shelters and the patients receive the al sanatorium treatment ; a large and fully trained staff of nurses is attached to ry institution. The hospitals in only very few cases have their own physician. ey are in charge of the physician at the county hospitals and have a common adm- tration with them. The bed capacity of the tuberculosis hospitals is now so exten- e that the majority of patients who apply for admission can be received almost mediately, and beds are frequently available.

We have the following tuberculosis hospitals (the figures in the brackets indicate number of beds) : Aabenraa (30), Aalborg (24), Aarhus (36), Assens (20), Rønne), Brødstrup (12), Ebeltoft (28), Esbjerg (18), Fakse (13), Frederiksberg (68), e (19), Hjørring (22), Hobro (26), Holbæk (24), Holstebro (26), Hornsyld (14), rsens (18), Kolding (24), Øresunds-Hospital in Copenhagen (273), Finsens Lys- titut (Institute for Light Treatment) (12), Lyngby (24), Nykøbing, Mors (8) ; Odder), Odense (26), Ribe (20), Roskilde (12), Svendborg (20), Thisted (18), Thorshavn, roes (16), Vejle (28).

In all 30 hospitals, total number of beds 929.

Invalid Homes. The legislation concerning invalid homes aims at aiding tubercu- s invalids who do not need treatment in a hospital or sanatorium, but whose econo- circumstances and working capacity are so reduced that they cannot exist without istance. Four such homes have been erected, the beds totalling 132. The duration

of stay in such homes is unlimited and the inmates often remain in the homes for the rest of their lives.

Invalids suffering from tuberculosis fall under the Invalidity Insurance Act of 6th of May 1921, as in the case of other invalids. They are entitled under this Act to an invalidity annuity of 800 kroner should their working capacity be reduced to such an extent that it is only one-third of the normal or less. In order to convey an impression of the social importance of this Act, we would mention that, during the first 18 months the Act was in force, 5,080 cases were treated ; of these, 754 were tuberculous, out of which only 86 were dismissed, 234 granted temporary and 3 permanent invalidity annuity.

We have the following invalid homes : the figures in brackets indicate the number of beds : Ry (12), Faaborg (10), Gyvelholm (28), Nursing Home at Tagensvej, Copenhagen (82).

Recreation and Convalescent Homes. There is no great demand for recreation and convalescent homes. On the initiative of a private association (Boserup Mine) and a single municipality, a few smaller recreation homes have, however, been erected. On private initiative a " Dagkursted " (a day sanatorium) has been instituted in Copenhagen. Here the patients may spend the day in healthy surroundings free of charge, in open-air shelters or, should their health permit it, engaged in light work ; the patients take their meals at the day sanatorium. The National Association has erected two smaller recreation homes for children previously treated in sanatoria. These homes are open during the four summer months, and the children, especially those suffering from infective tuberculosis, may stay there for six weeks or two months free of charge.

Seaside Hospitals and Seaside Sanatoria. There are three seaside hospitals with 375 beds for the treatment of patients suffering from more advanced scrofula, surgical tuberculosis and lupus.

Nine seaside sanatoria with 480 beds for the treatment of children suffering from scrofula, preferably in the earlier stages, have been erected. With a single exception they are open all the year round.

The equipment of the seaside sanatoria is more primitive, but at the same time quite efficient ; the seaside hospitals, on the other hand, are equipped with all modern requirements : well-fitted operating theatres and rooms for orthopædic treatment, X-ray room, light-baths, etc. While the treatment in the seaside sanatoria is generally completed within about four months and only in special cases exceeds this limit, the stay in the seaside hospitals varies greatly. In these institutions all stages, from the most advanced to the earliest, are treated, and the duration of stay varies from a few months to several years according to the localisation and intensity of the tuberculosis.

We have the following seaside hospitals : Juelsminde (100), Finsen's Kysthospital (145), Refsnæs (not recognised by the State) (130).

Seaside Sanatoria : Hellebæk (70), Munkerup (80), Fakse Ladeplads (30), Kalø V. (30), Nyborg (30), Hjerting (30), Høve at Asnæs (130), Prinsesse Margarethas Kystsanatorium (30), " Den sønderjydske Fonds Kystsankatorium i Augustenborg " (50).

In Copenhagen and Frederiksberg, there are two tuberculosis schools in which children suffering from infective tuberculosis are educated. They spend the greater

of the day there, have their meals, and are under instruction, with spells in between when they rest in open-air shelters.

In the whole of the tuberculosis institutions in this country, the population of which is 3,300,000, the number of beds totals 3,458, of which 2,603 are exclusively for treatment of patients suffering from pulmonary and laryngeal tuberculosis. In other words, there are 107 beds per 100,000 population.

In 1922 (the latest year for which statistical returns are available), the cause of death was in 3,177 cases due to forms of tuberculosis, *i.e.* 94.9 deaths per 100,000 population. For every 100 deaths from tuberculosis, there are 109 beds available, a ratio which exceeds that of any other country.

According to the medical report for the State of Denmark, the following numbers of patients were in 1921 admitted into tuberculosis institutions :

Tuberculosis sanatoria	3,312
Tuberculosis hospitals	2,273
Seaside hospitals	931
Seaside sanatoria	1,528
Total.....	8,044 patients.

In order to realise the significance of the large number of patients treated annually in residential institutions, it should be recognised that some of these patients are in an advanced stage and are by the institutional treatment isolated during the last and highly infective period of their life (of all deaths from pulmonary tuberculosis in Copenhagen, about 70 per cent occur in a residential institution, whereas about 33 per cent of deaths from pulmonary tuberculosis in the rest of the country occur in a residential institution). The majority of patients leave the residential institution after having benefited positively from the treatment, and having, during their stay, gained information and appreciation of the importance of general hygiene, which as a rule is communicated to the family at home. This forms an active link in the combating of tuberculosis — undoubtedly far more effective than any other form of propaganda.

The Campaign against Tuberculosis in the Home. Economic circumstances may deprive any patient from treatment in a residential institution, the cost of treatment being entirely defrayed at the public expense and the family of a patient supported as the bread-winner is under treatment. Public relief, however, ends on the discharge of the patient. Should the necessity for further assistance arise, private assistance takes up the case. The main object of certain societies is to provide assistance for stays in the country, economic support, food either free of charge or at reduced cost. The National Association is endowed with considerable funds from which the patients may obtain assistance on their discharge from the sanatoria. This assistance is only distributed by the dispensaries. In the larger towns (*e.g.* Odense, Copenhagen, Frederiksberg) the work of these institutions is in the main carried out on the same lines as in the corresponding institutions in other countries. Their main duty is to improve home conditions, to detect the disease in an early stage, to improve the hygienic conditions of the homes, to allocate cases of disease to the appropriate institutions and

to protect the healthy, especially the children, against infection. This work is really accomplished in the following way : healthy children are removed from homes infected with tuberculosis and kept away from these as long as there is any danger of infection. The children are boarded with private families under the control of child welfare authorities, under satisfactory conditions, frequently on the outskirts of the town or in children's homes. The period during which the children are boarded out varies from a few months to several years. Since 1911, when this special work was instituted, 2,155 children have been boarded out in Copenhagen and at Frederiksborg on the instigation of the dispensaries. In 1916, a private society at Frederiksborg erected a house consisting of sunny flats arranged in a manner suitable for families in which cases of the disease occur. The flats consist of three rooms, of which one is used as isolation room and must only be occupied by the person or persons suffering from the disease; in addition, each family has a small garden. The rent of these flats is very moderate and they are let through the dispensaries under the control of the authorities to which they are placed. Under the Tuberculosis Act, the State can grant subsidies up to the building costs for the erection of similar houses, these being in return subject to public control.

In a number of provincial towns, dispensaries have been established on moorland lines, no permanent doctor being attached to the dispensary. A nurse is attached to the dispensary, her time being in the larger provincial towns fully occupied by her work in the dispensary, whereas in the smaller towns, where the work is not so heavy, this special work is carried out by a deaconess, parish sister or home nurse together with their other nursing work. The nurse of the dispensary works in the localities in which tuberculous cases occur, and in liaison with the medical practitioner in attendance on the patient. This method has proved highly efficient, as it avoids friction between the dispensary and the medical practitioners so common in the smaller towns.

The local associations under the National Association which have been organised in all the counties carry out an extensive dispensary work both in the rural and suburban districts by helping to raise the standard of general hygiene in the homes in which the disease occurs. The extensive practice of home-nursing in Denmark should also be emphasised. Almost every municipality in the country has a fully trained nurse who attends free of charge every person without means. She is appointed by a nursing association, of which over 900 are distributed over the country, or by a sick-benefit club, or by the municipality, or as parish sister. The National Association provides courses on the prophylaxis and hygiene of tuberculosis to which the nurses are admitted and which they can attend free of charge as the total cost is defrayed by the National Association. With a view to organising the tuberculosis work in the rural districts, the National Association has in recent years started special work within a definite rural district with a population of 62,000. By co-operating with the medical practitioners in this district, the hygienic conditions in the home where cases of the disease occur are examined, and any lack of hygiene is remedied. By continuing this work through a series of years and by studying closely the occurrence of the disease in the individual homes, experience will be gained of the proper lines to carry out work among the rural population.

The State's Grants-in-aid of the Combating of Tuberculosis. A campaign waged on a scale requires large means. An examination of the annual contributions from the State in the past years for the combating of this disease will convey an idea of the sums voted for this purpose.

<i>Years.</i>	<i>Annual State Grants.</i>	<i>Per Million Population.</i>
1900-04	102,600 gold francs.	41,200 gold francs.
1905-09	1,412,400 »	535,700 »
1910-14	2,012,400 »	718,300 »
1915-19	3,219,800 »	1,083,600 »
1920-21	5,738,000 »	1,803,800 »

In addition, we have the very considerable contributions provided under the Tuberculosis Act by the sick-benefit clubs and the municipalities. Private contributions are also considerable, especially those of the National Association. The means collected by the National Association are supplied by contributions from members and institutions, by numerous bequests bestowed on the many branches of its work, and by the considerable income derived from the sale of the "Høestblomst" (the Annual Flower). The idea of the "Høestblomst" is taken from the Swedish "Høstblomma" (Mrs. *Beda Hallberg*) and is carried out in Denmark in the following manner: Every year on a certain day, generally in September, all over the country a neat flower made of cellulose is offered for sale without any victimisation. Efforts are taken to introduce the flower to all homes, schools, workplaces, etc. The sale of this small flower, which costs 10 øre a piece, has brought in a clear profit of 10,000 to 150,000 kroner (about 200,000 gold francs) every year. In the twelve years the "Høestblomst" has been offered for sale, it has provided the National Association with a total amount of more than 2,750,000 gold francs.

The income which the National Association has derived from the sale of the "Høestblomst" has been of the greatest importance for the whole of its work. A large part of its dispensary work both in urban and rural districts is based exclusively on this income. Out of these means the National Association has been able to defray the expenses of important building operations.

The Decline in the Tuberculosis Death-Rate. There is clear evidence from the statistics obtained that Denmark — which is probably the country in Europe that has spent most on reducing and abolishing the disease — stands at present in the country with the lowest tuberculosis death-rate.

This leading position has been won through the very strong decline in the tuberculosis death-rate within the present century — the same period in which the campaign against tuberculosis has been organised — a decline far more pronounced than that in the general rate of mortality. At the same time, the population has been enlightened as to the sanitary methods for prevention of the spread of infection from tuberculosis. Furthermore, the realisation of the fundamental principles of general hygiene has grown by leaps and bounds and is shown in many ways. During recent years a comprehensive hygienic legislation has been carried out, laying down rules for the work of

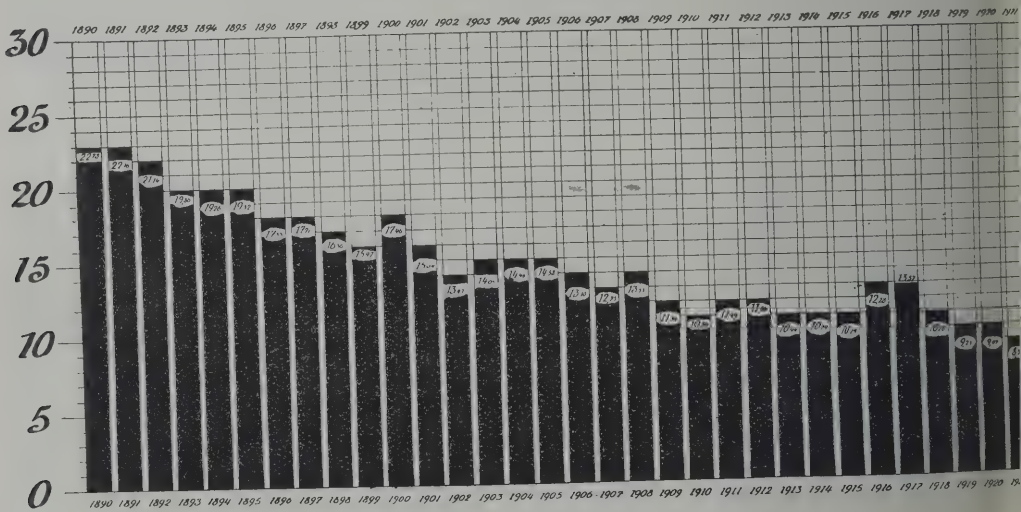
children, introducing more stringent supervision of hygienic conditions in factories, workshops, special building Acts, loans for the erection of dwellings, Acts as regards examination of food, meat inspection, work in bakeries, etc. Home-nursing is applied on a large scale, the total abstinence movement has grown steadily, the work in allotment gardens has given such general satisfaction that 30,000 of them are now laid out at present, and that children from the towns (from Copenhagen alone in a number of 20,000 annually) are accommodated in the country during the summer holidays. It is only natural that these instances of advanced hygienic culture taken at hand have had a beneficial effect on the population's mode of life and have contributed to increase its power of resistance against the incidence of diseases including tuberculosis.

Therefore, a statistical account of the decline in the tuberculosis death-rate is of special interest, the more so as such an investigation is based upon the most reliable material that can be procured. For deaths occurring in the towns all death-certificates (on which the cause of death is indicated) are issued by doctors. The following summary of the tuberculosis death-rate in the urban population, dating from 1890, is exclusively based on causes of death certified by doctors and must therefore be regarded as the most accurate possible.

Among the rural population also the majority of death certificates are issued by doctors. In the comparatively few cases where such a certificate is not given, the county medical officer procures information regarding the cause of death from the doctor who attended the deceased. Consequently with regard to recent years we are able to work out fully reliable statistical returns of mortality from tuberculosis in the rural population.

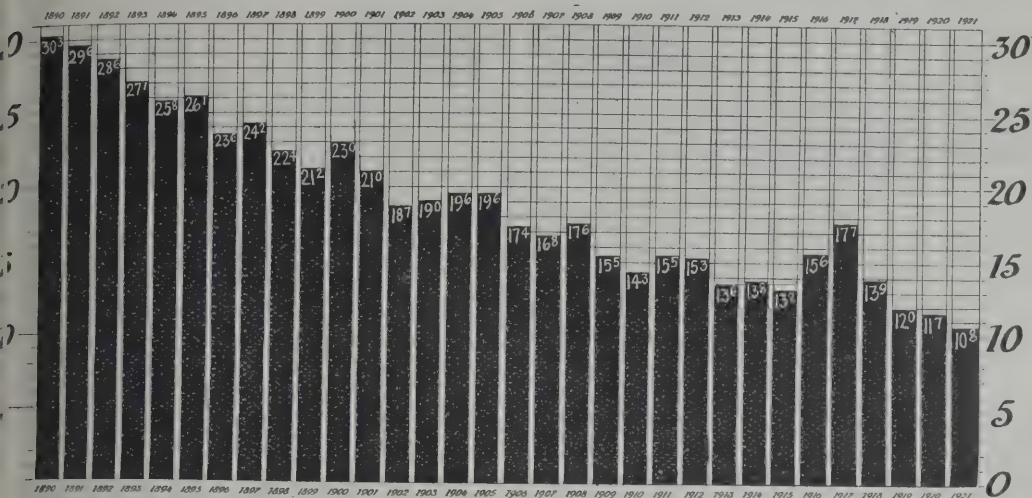
The decline in the tuberculosis and pulmonary tuberculosis death-rate in the urban population from 1890 to 1921 is given in the subjoined curves :

PULMONARY TUBERCULOSIS DEATH-RATE IN THE URBAN POPULATION OF DENMARK, 1890-



NUMBER OF DEATHS PER 10,000 (FIG. 1).

TUBERCULOSIS DEATH-RATE IN THE URBAN POPULATION OF DENMARK, 1890-1921.



NUMBER OF DEATHS PER 10,000 (FIG. II).

The curves on the whole show a strong tendency to fall. The figures may from year to another be subject to surprising fluctuations, as the individual year may be affected by accidental circumstances or influenced by special conditions. If the period under review is divided into quinquennial periods a steady decline from quinquennium to quinquennium will be found :

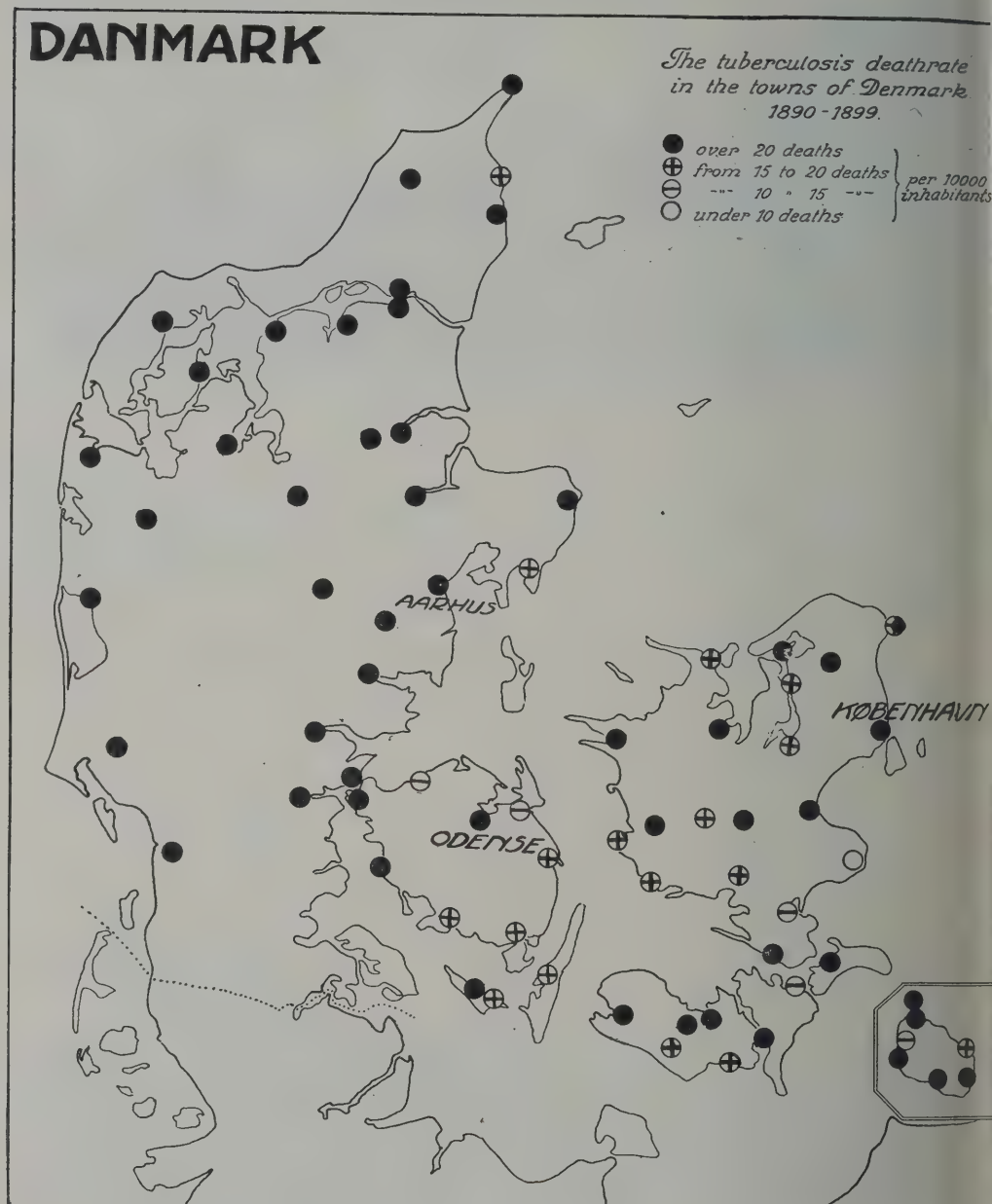
Deaths per 10,000 in the urban population.

	<i>Of All Forms of Tuberculosis</i>	<i>Of Pulmonary Tuberculosis</i>
1890-94	28.25	21.01
1895-99	23.45	17.33
1900-04	20.23	14.84
1905-09	17.32	13.02
1910-14	14.48	11.09
1915-19	14.15	11.11
1920	11.65	9.07
1921	10.76	8.39
1922	10.12	7.98

The curves for the years 1916 and 1917 indicate an increase in the tuberculosis death-rate, and these years have also affected the whole of the quinquennial period 1915-19 in such a way that the death-rate in this period is on a par with that in the directly preceding quinquennium. This passing rise may undoubtedly be attributed to the special conditions due to the Great War. The same rise may be demonstrated — in a more pronounced degree — in other countries that did not join actively in the war. In Denmark the rise proved to be a purely passing feature, the years from 1917 and onwards showing a continuous and steady decrease.

Tuberculosis Death-Rate in the Towns of Denmark.

1890 - 1899



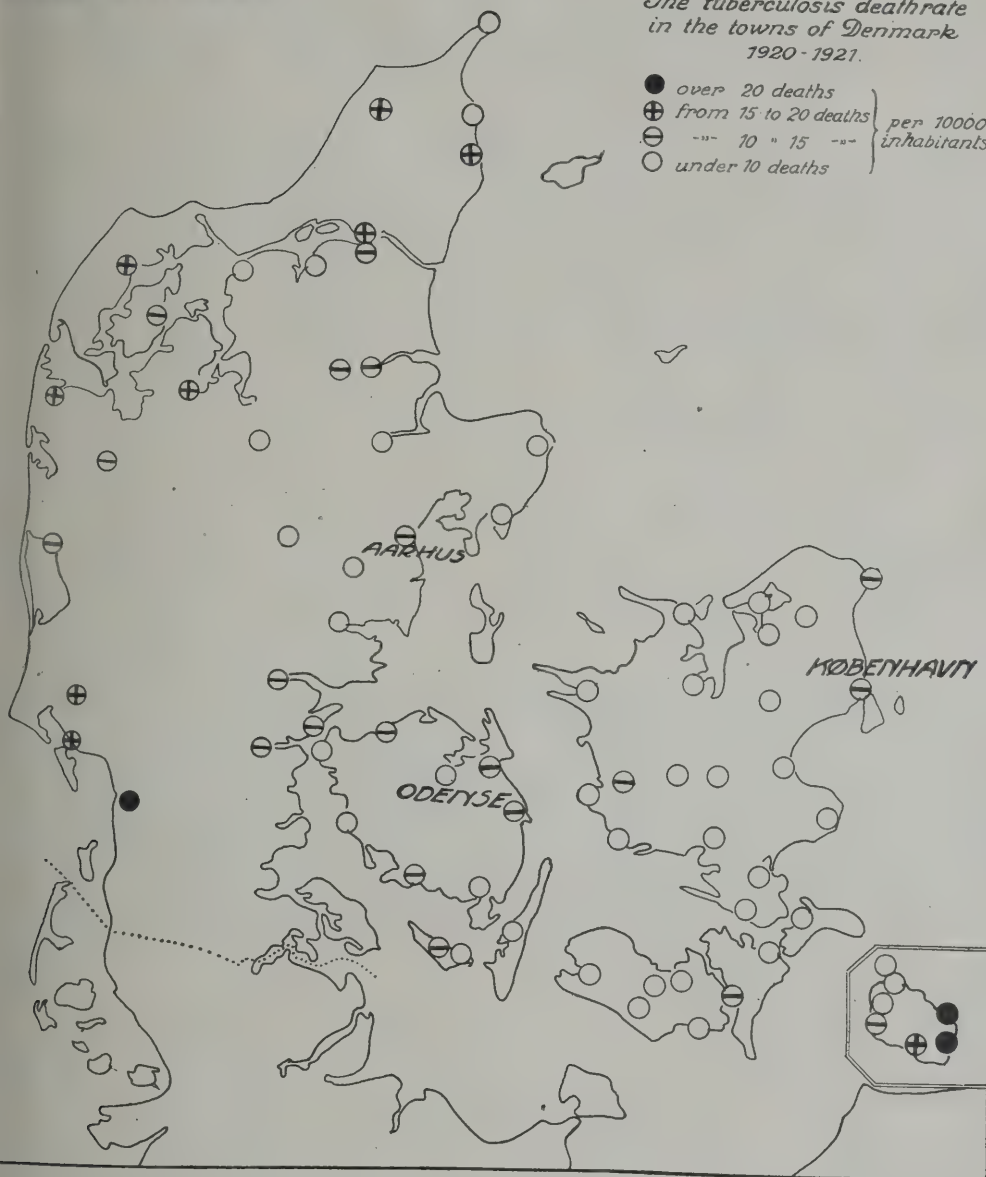
Tuberculosis Death-Rate in the Towns of Denmark.

1920 - 1921

DANMARK

*The tuberculosis deathrate
in the towns of Denmark
1920-1921.*

- | | | |
|---|----------------------|----------------------------|
| ● | over 20 deaths | } per 10000
inhabitants |
| ⊕ | from 15 to 20 deaths | |
| ⊖ | " 10 " 15 " | |
| ○ | under 10 deaths | |



If we take the period from after the beginning of the new century, the percent decrease in the total death-rate from the quinquennium 1900-04 to the triennium 1920-22 is as follows :

Decline in the years 1900-04 to 1920-22 :

	<i>Total Urban Population Percentage.</i>
In the total death-rate.....	20.2
In the death-rate from all forms of tuberculosis	46.5
In the death-rate from pulmonary tuberculosis	42.9

These figures show a marked decrease in the tuberculosis death-rate during the period in which the tuberculosis campaign has been carried on, the decline in the mortality from tuberculosis being far more pronounced than the decline in the total mortality.

The great decrease of tuberculosis in the urban population may also be seen from an examination of the conditions in each of the 74 towns of this country. The period under review (1890-1921) is divided into four periods (shown in the table below) and at each period the number of towns with the death-rate from tuberculosis exceeding 20, 15-20, 10-15 and under 10 per 10,000 population is tabulated :

The Tuberculosis Death-Rate per 10,000 population :

	<i>exceeding 20</i>	<i>15-20</i>	<i>10-15</i>	<i>under 10</i>
1890-99....	50 towns	18 towns	5 towns	1 town
1900-10....	21 »	24 »	26 »	3 »
1910-19....	7 »	10 »	28 »	29 »
1920-21....	3 »	8 »	20 »	43 »

The trend of the development is at once apparent and, on merely comparing the situation in 1890-99 with the years 1920-21, it will be noted that the situation in 1920-21 is entirely the reverse of that in the decade 1890-99.

Between 1890-1899 all towns in Denmark, except six, had a tuberculosis death-rate exceeding 15 per 10,000 population, and in 50 of these towns the tuberculosis death-rate even exceeded 20 per 10,000 population. In the years 1920-21 only the smaller towns, with a population totalling approximately 10,000, had a death-rate exceeding 20 ; in the majority of towns (43) it has fallen below 10.

As regards the sex proportion of the tuberculosis death-rate in the urban population, there is a strong tendency to fall for both males and females, as indicated by the table below, in which the rates are stated both for the metropolis and for the provincial towns :

Deaths due to Tuberculosis per 10,000 Population :

	<i>Copenhagen</i>		<i>Provincial Towns</i>	
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>
1890-94.....	36.4	23.7	29.4	27.1
1920-22.....	12.3	10.6	9.9	11.6

In the first period under review (1890-1894) a marked difference prevails between Copenhagen and the provincial towns, the tuberculosis death-rate for males in Copenhagen far exceeding that of the females, whereas in the provincial towns the difference between males and females is slight. During the period 1920-1922 this difference was the main equalised. There is a strong decline in the tuberculosis death-rate for both males and females, even if it is more pronounced in the male population in Copenhagen.

The fluctuations in the tuberculosis death-rate in the various male and female age groups from the period 1890-1894 to the years 1920-1922 are given in the subjoined diagram and the table below, in which the percentage decline of the death-rate in each age group is also included :

Age	Males.			Females.		
	1890-1894	1920-1922	Decline in percentage	1890-1894	1920-1922	Decline in percentage
-4	43.7	11.7	73.2	39.0	10.1	74.1
-14	14.3	3.6	74.8	19.9	5.4	72.8
-24	25.7	13.5	47.7	21.4	15.5	27.6
-34	33.3	13.6	59.2	26.2	14.2	45.8
-44	41.8	11.0	73.7	27.6	10.9	60.5
-54	45.8	13.5	70.5	23.1	10.5	54.5
-64	47.5	13.2	72.2	24.6	9.9	59.7
-74	50.2	15.4	69.3	27.6	10.1	63.4
-75	36.5	10.6	70.9	18.9	9.1	51.8

It is at once apparent that there is a strong decline in mortality from tuberculosis in both males and females in all age groups. The illness also shows a marked decrease amongst females in the age between 15-35, the incidence of tuberculosis everywhere showing a rising tendency in just these age periods. There is a stronger percentage decline among adult males in all age groups than among females. But the most noteworthy fact is an extremely strong decline in the child mortality from tuberculosis. Among children the death-rate has decreased by 70-75 per cent in the years 1890-94 to 1920-22, a proof of the beneficial effects of the prophylactic methods adopted.

All death certificates issued at death in rural districts are now verified by the medical practitioners, so that a correct estimate as to the incidence of tuberculosis amongst the rural population is available. A closer examination of this question reveals the fact that the rural tuberculosis death-rate is somewhat lower than the urban, in the rural tuberculosis death-rate for males is much lower than the corresponding urban, whereas there is no marked difference between the urban and rural tuberculosis death-rate with regard to females. The frequency of the incidence of tuberculosis varies much in different parts of the country. In the islands, *viz.*, Zealand, Funen, etc., the disease is rare ; in eight of the eleven counties of these islands the mortality from all forms of tuberculosis in 1921 was under 7.7 per 10,000 population ; in none of the remaining three counties did it rise above 10. The Farø Islands occupy an exceptional position ; the incidence of tuberculosis seems here to have a wider distribution than in any other part of the country, and the mortality from tuberculosis is far in excess of the mortality of all the Jutland counties. Jutland is in fact the part of the country most ravaged by the disease. Of the ten Jutland counties the tuberculosis death-rate rose, in 1921, above 10, whereas in the remaining five it is between 8 and 10 per 10,000 population. In this summary the four South Jutland counties which were

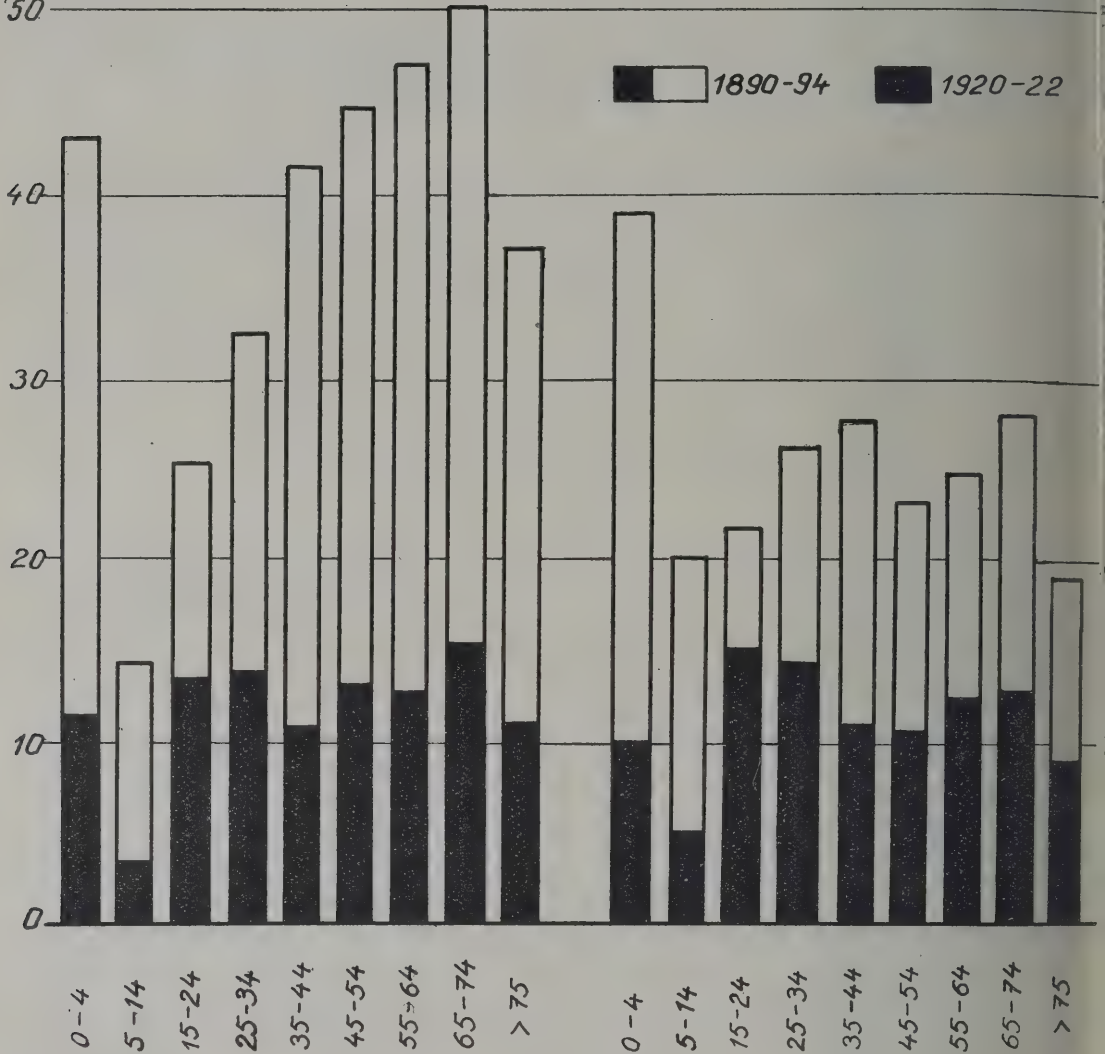
TUBERCULOSIS DEATH-RATE IN AGE GROUPS.

Males

Females

par 1000

par 1000



incorporated in the Monarchy in 1920 are not included owing to the fact that the statistical conditions were not sufficiently known in 1921. While Jutland is the part of Denmark in which the incidence of tuberculosis is relatively greatest, a closer examination of the deaths in smaller rural districts proves that there are very marked variations. There are areas in which the disease is just as rare as in the islands; conversely, in other areas the disease is much more virulent. It seems to be a universal rule that tuberculosis is rare in the immediate vicinity of the sea.

If we take the rural population collectively, the tuberculosis and pulmonary tuberculosis death-rate give the following figures in 1920, 1921 and 1922 as against those of the urban population :

	<i>All Forms of Tuberculosis</i>			<i>Pulmonary Tuberculosis.</i>		
	1920	1921	1922	1920	1921	1922
Urban population	11.7	10.7	10.1	9.1	8.4	7.98
Rural population	9.8	9.4	9.04	7.5	6.8	6.8
Total population	10.6	9.9	9.5	8.2	7.4	7.3

While the mortality from tuberculosis through a series of years was rather high in this country, it has at present receded so much that Denmark now occupies a leading position among the States of Europe as the country with the lowest rate of mortality from tuberculosis. This marked decline in mortality from tuberculosis has occurred in a period in which energetic work has been carried out and heavy economic contributions provided for combating the disease. In 1900, the year before the tuberculosis campaign was started, the total number of deaths from tuberculosis was 2,066 out of the urban population of Denmark, totalling at that time 897,000. In the year 1922, the urban population had increased to 1,408,000. If the tuberculosis had been stationary in the period under review, the total number of deaths from tuberculosis in the Danish towns would have been 3,243 ; the actual number, however, was only 1,426, or in other words 1,817 deaths fewer than calculated.

In 1922, 1,290 deaths from tuberculosis were therefore prevented among each million of the population as against the year 1900.

THE COMBATING OF VENEREAL DISEASES IN DENMARK

BY DR. G. TRYDE,

President of the National Board of Health.

INTRODUCTORY REMARKS.

Syphilis seems to have first appeared in Denmark in the last half of 15th century. In spite of the fact that it originally occurred purely as a sexual disease, the bad hygienic conditions of those days encouraged the extragenital spread of disease. Moreover, this spreading was materially assisted owing to the disease being often misjudged, especially as it was always considered a disgrace to suffer from it, no matter how acquired. Therefore, it often happened that the disease was concealed by those suffering from it or else they sought treatment from quack-doctors in order not to arouse too much attention.

In the 18th century the disorder spread alarmingly among the peasant classes in various parts of the Kingdom and, owing to neglect of treatment, assumed forms no longer known — of so serious a character that it resulted in the complete destruction of various parts of the body, particularly of the face and the bony parts and integuments of the cranium. According to the Danish Professor of Venereology *Ehlers*, in his opinion, this was due to the fact that the disease was not spread by sexual infection but was carried from mouth to mouth by the joint use of eating utensils, etc. The authorities were therefore obliged to adopt measures to combat the disease, notwithstanding its widespread extent, these were, for a long time, only local measures employed.

LAWS AND REGULATIONS FORMERLY IN FORCE.

In 1774, in the island of Fyen (Denmark), it was resolved that the cost of medical and medical treatment in cases of venereal or other contagious diseases should be defrayed respectively by the county or provincial towns.

In other places, the district surgeons received payment of individual accounts for treating the disease; a few of the great landowners voluntarily undertook to defray the cost of treatment; here and there small premises were fitted up for the reception of one, two, or more sufferers, where less opulent persons could be treated at trifling expense or wholly gratis. These premises were under the supervision of a court

medical officer. The infirmaries were small, and persons in the service of others often became homeless after contracting the disorder because no one dared to take them in. Consequently, it was agreed that the evil must be combated.

The first definite set of regulations were laid down in a *Rescript* dated 14th March, 1788, which ordered — but for a particular part of the country only, *viz.* : Aarhus diocese :

(1) That every person, rich or poor, suffering from venereal disease should receive free medical advice, free medicine, together with free nursing when infirmaries or premises were equipped for the patient's treatment ;

(2) That sufferers must agree to receive treatment in a town where that treatment could best be given.

(3) That those who failed to report themselves should be punished ;

(4) That the priests should notify cases of persons known to them to be infected or suspected of being so ;

(5) That the expenses should be defrayed not by the parish to which sufferers belonged but by the whole diocese (one or more counties).

Thus Denmark became the first country to introduce legislation to deal with the spread of venereal disorder, legislation in which the guiding principle has always been, and still is, the right to and access to *free treatment and, on the other hand, the obligation to submit to treatment.*

On July 2nd, 1790, these regulations were put into force all over Denmark.

When common persons (*Almuene*) are mentioned in the laws and regulations, the ordinary middle-class population are included as well as the poorest classes.

Free treatment was originally given by the district surgeons and later by district medical officers, but other medical men were not prevented from undertaking the cure of venereal patients, provided the latter were willing to pay for it. A few years later, by a Decree dated September 5th, 1794, a penalty was inflicted on all persons unlawfully practising the art of healing, and an end was thus put to the activities of quacks.

These regulations were gradually made more explicit. For instance, a Royal Decree in 1829 laid down that "the expenses shall be borne by the county or county town in which the patient is first received for treatment, even if the said patient does not belong to or is not entitled to Poor Law Relief in it". This decree has often been the cause of complaints, but these have always been dismissed, as it has justly been held that the cure and care of venereal patients is not a matter for Poor Law Relief but the natural consequence of the decision that free treatment must be available to all.

In 1836 the troops in Copenhagen who were infected were charged to state the source of infection in order that those persons whom it concerned might be summoned to attend for treatment ; in 1838 infirmary doctors were notified that, should a venereal patient be admitted without the directions of the district doctor, the county authorities were to be informed in order that they might decide whether other members of the patient's family should be examined — a decision which has hardly ever been acted upon ; in 1852 a confirmatory decree was issued that patients not submitting themselves for treatment were liable to punishment and, in 1855, that all lawfully discharged

seafaring folk in the country were entitled to all the advantages the law provide matter what their nationality might be.

These regulations gradually produced an effect. The population, which originally had shown much unwillingness to submit to treatment was persuaded of its usefulness. At that time treatment with quicksilver and sarsaparilla was general. The clergy interested themselves in getting their infected parishioners treated, and medical men displayed great zeal, despite their small fee, which they received only after a complete cure and full restoration to health had been effected and no relapse had taken place within two years. As far as possible, all middle-class patients, whose numbers were steadily increasing, were placed in hospitals, where they remained for long periods and on discharge received orders to attend for inspection after the lapse of from four to six weeks.

In the common penal law it was laid down in 1866 that those who, knowing, supposing themselves to be infected, practise sexual intercourse may be punished by imprisonment, even with hard labour.

Thanks to these measures, the disease ceased to be a national danger about the middle of the last century and resumed its normal status as a sexual disease.

However, the need gradually arose for revision of the original regulations of 1788 with their later additions, and on April 10th, 1874, a new law regarding measures to counteract the spread of venereal disease came into force.

The right to treatment at public expense was, by this law, extended to *everybody regardless of class or financial circumstances*, and all infected were obliged to submit to treatment. Further, the new law gave the right to demand "that those persons whose condition is such that contagion cannot properly be prevented or who do not adhere to the directions for the prevention of contagion shall be sent to hospital." The paramount object of the law is the prevention of contagion. If the infected person will not voluntarily go into hospital the Lord Lieutenant decides the matter (with appeal to the Minister of Justice), and the attendance at hospital can be enforced by fines.

Patients in receipt of regular Poor Law Relief must always be treated at a hospital, and no person receiving hospital treatment at public expense can leave the hospital without permission from the doctor.

Should the doctor have reason to fear a relapse after a cure has been effected, he may order the person concerned to appear for examination at a fixed time; regulations are embodied to prevent the transmission of the disease to or by foster-children and children nursed by women other than their mothers. Infringement of these regulations may entail not only punishment but also the payment of compensation.

Regulations were added concerning the compulsory examination and treatment of prostitutes and women under the supervision of the police. It is also laid down that the examination of women suspected of practising prostitution may be carried out by a woman authorised for the purpose.

The payments granted by the public authorities for these examinations and for the treatment of venereal patients were very small and no one was entitled to force general practitioners to undertake cases. The obligation to do so was therefore imposed upon the public doctors (Medical Officers), whose comparatively small numbers rendered free treatment very difficult unless the patient was admitted into hospital.

The following years produced no new legislation of importance. On the whole the law worked well, but feelings gradually increased against professional prostitution and strong demand for its abolition was made which led to the law now in force, viz. : *Law to counteract Professional Immorality and Venereal Contagion, dated March 30th, 1906.*

Its main object was the overthrow of immoral practices ; the police regulation of professional prostitution was abolished ; it was forbidden to keep a brothel ; penalties imposed on professional prostitutes were widened to include intended immorality ; it was forbidden to advertise for sale articles to prevent the results of sexual intercourse.

The laws now valid in Denmark concerning the direct combating of venereal disease are as follows :

1. The person who is knowingly or supposedly infected with venereal disease and who still practises sexual intercourse shall be imprisoned or sent to a house of correction ; further, if infection takes place and those infected have not been cognisant of the danger of infection, compensation may be paid. Persons who under the same conditions have intercourse with and infect their husbands or wives shall be punished if the infected person claims redress within a year.

2. Everyone suffering from sexual disease is, without any reservation whatever, entitled to free treatment and nursing but is obliged to submit to treatment either privately or at the public expense and can be compulsorily put into hospital under the conditions as stated in the previous laws.

3. In order to ensure the attendance of a venereal patient for treatment or examination as required by the doctor and in order that those who do not observe the injunction may not be able to excuse themselves by asserting that proper notice has been given them, it was decided that the notice should be printed on a special form.

If a venereally infected person absents himself from treatment, the doctor must inform the District Medical Officer and the latter must have the person summoned to treatment, if necessary with the assistance of the police. To everyone under treatment for venereal disease the doctor presents a printed notice setting forth the contagious nature of the disease and the legal consequences of infecting or exposing others to infection and warning against matrimony while danger of infection lasts.

4. Every doctor must, in his weekly report to the district doctor, state the number of persons to whom he has given such an order to attend for treatment and must certify that he has kept these regulations.

5. A syphilitic child must not be nursed by any woman other than its mother, and a nurse who knows or supposes herself to be syphilitic must not suckle another's child. Infringement entails punishment and liability for compensation. Compensation is also incumbent upon those who, under corresponding conditions, put such a child to nurse or give it out to nurse without informing the foster-parents or nurse of the danger of infection. If other children are exposed to the risk of infection the child

may not be put out to nurse. A child is considered as suspected of syphilis if either of the parents have suffered from the disease at least seven years previously and twelve months have not elapsed since its birth.

6. Everyone practising prostitution or soliciting for that purpose and every person suffering from or suspected of suffering from venereal disease who comes into contact with the regulations stated in the law can be sent for medical examination. This examination must be performed by the district doctors or by a specially appointed visiting doctor. Every person concerned has the right to demand examination by a doctor of the same sex as there is one in the district.

The district doctors and visiting doctors are obliged to treat every applicant suffering from venereal disease and must not accept payment from the patients for their services ; they are, however, entitled to demand that the patients apply to them at a fixed time and place ; if the patients do not comply, they are within their rights in demanding payment from them.

7. Patients entering hospital to receive treatment at public expense must leave the hospital without a written order from a doctor.

8. Under the heading of venereal disease may be classed syphilis, gonorrhoea and *ulcus venereum* (venereal ulcers). Tardy forms of syphilis also come under this category and are entitled to free treatment and nursing — in the cure are included all remedies — but on the other hand gonorrhoeical arthritis and teno-synovitis are not included in the diseases which are treated free.

The difficulty in regard to the regulations concerning free treatment has always been that the law secures treatment of infected persons only by publicly appointing practitioners, and if these, as is often the case, reside at a distance, the right to treatment is quite illusory. To confide the treatment to every practitioner would entail considerable expense ; this has, however, been done in certain counties. This is coupled with the heavy work entailed by the Medical Officers of Health, led to the appointment of the visiting doctors in many large towns. In Copenhagen there are always a sufficient number of them, who, at stated times, hold consultations in various quarters of the city.

The law therefore gives every person suffering from venereal disease the most extensive right to free treatment, and the control exercised over all patients undergoing treatment assures its thorough execution. Patients are received in every hospital throughout the country ; in the larger towns in special wards. As the county in which the infected person first seeks advice defrays all expenses while the disease lasts, the county authorities endeavour to procure beds in their own hospitals, for if the patient seeks admission in a hospital in another county, the expenses increase.

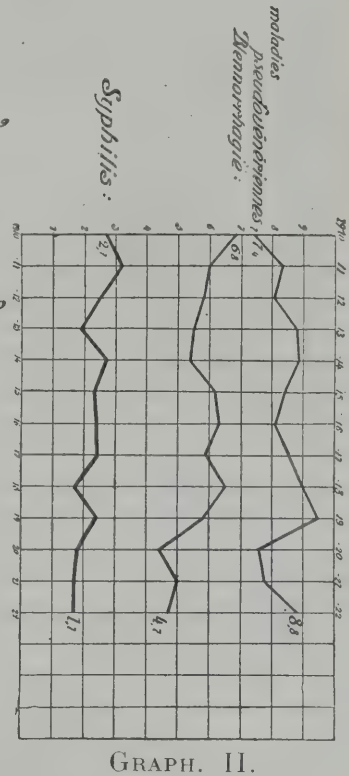
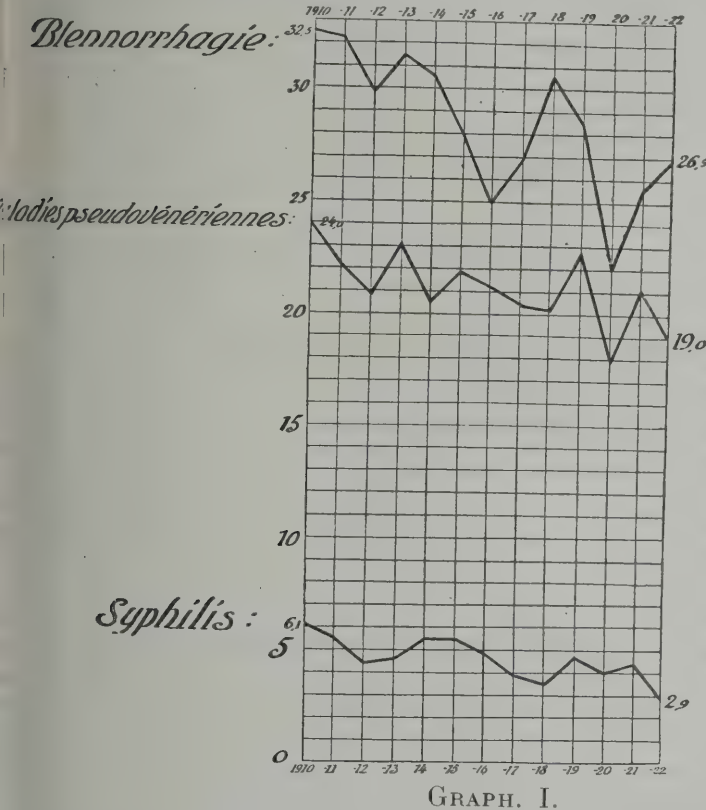
It cannot be definitely asserted that the abolition of the regulation of prostitution by the police has effected any reduction in the number of venereal cases, as varying conditions influence statistical returns, which are always difficult to obtain.

At first a considerable increase in the number of notified cases appeared, but it was discovered that this arose from the fact that the doctors were obliged to be more careful regarding their notifications. The modern treatment of syphilis with salvarsan, together with strict control as to the completeness of cure, has probably effected a decrease in the number of venereal patients — but it is doubtful whether the salvarsan has had this effect.

Amongst the rural population venereal diseases are now very rare, thanks to the great efforts made to combat them. If we wish to form an idea as to how far the decrease in the number of patients has fallen we must visit the larger towns and examine the numbers of those who have sought advice at the public clinics. The following two graphs will illustrate this :

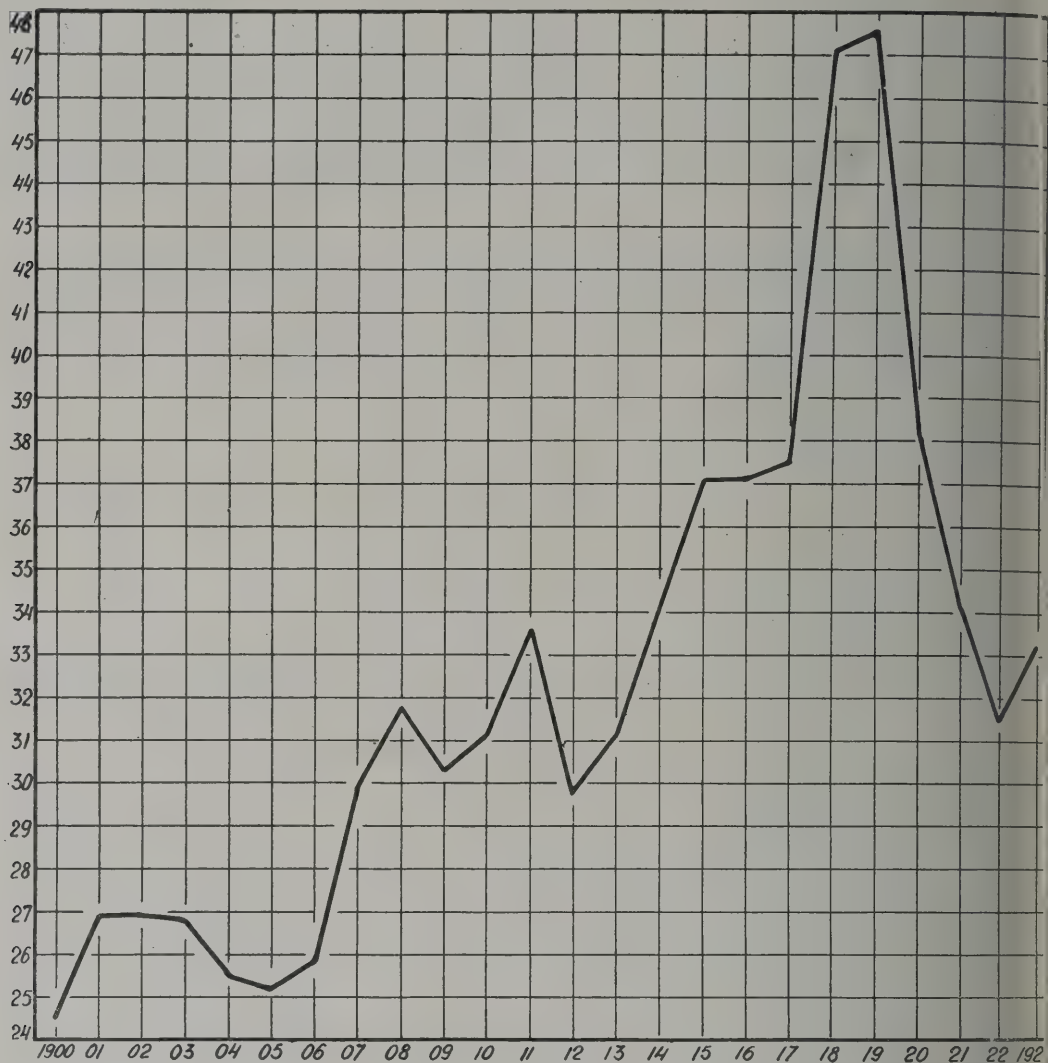
GRAPH. I. — Number of cases of Venereal Diseases per 10,000 inhabitants treated in the Municipal Clinics at Copenhagen. Men 1910-1922.

GRAPH. II. — Number of cases of Venereal Diseases per 10,000 inhabitants treated in the Municipal Clinics at Copenhagen. Women 1910-1922.



Some decrease seems to have taken place, but it may be only apparent, as the greatly improved conditions of living in 1918-19 for a large number of the population has probably induced more people than formerly to treatment by private practitioners instead of at the municipal clinics. Another indication may be obtained by observing

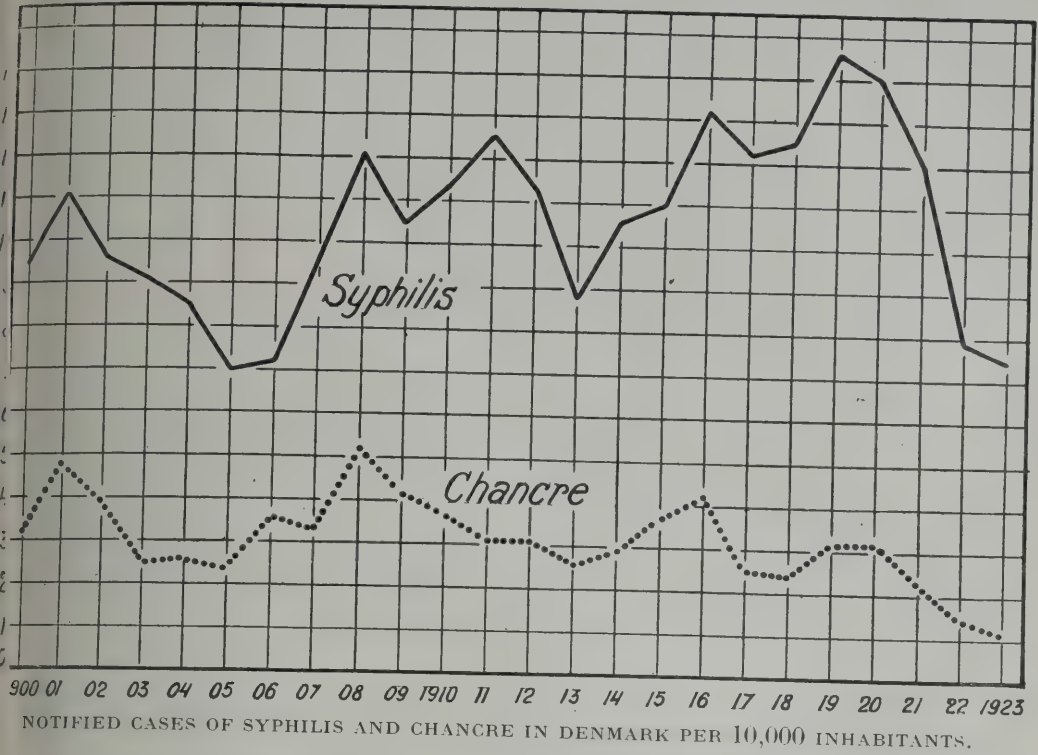
the number of venereal cases reported weekly by the doctors from all over the country to the National Board of Health.



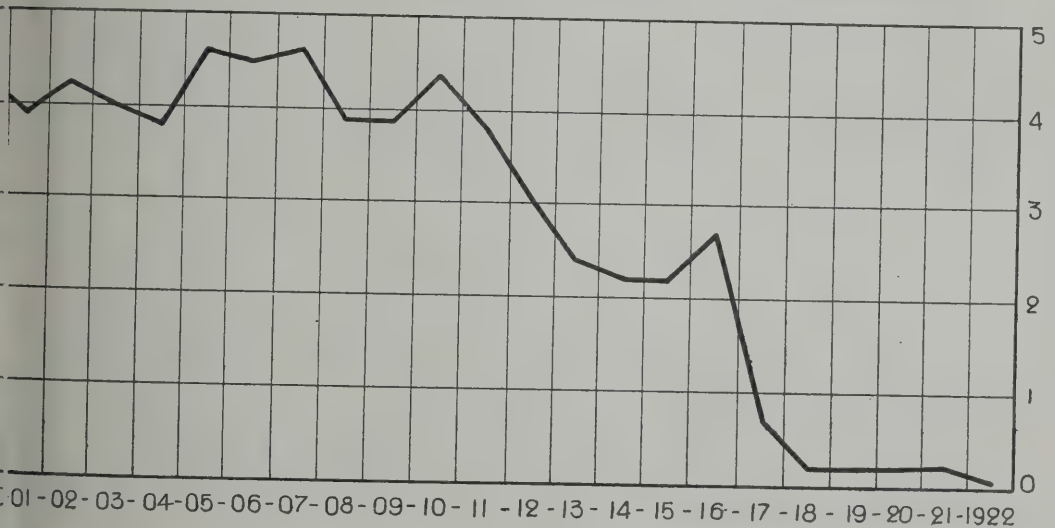
NOTIFIED CASES OF GONORRHOEA IN DENMARK PER 10,000 INHABITANTS.

According to these graphs, the two years mentioned show an unusually high number, which was only to be expected owing to the return home of military forces. Whether an actual decline in the number of venereal cases can be deduced from the figures of the last twenty years must be considered uncertain. However, it is possible that in the course of years more certain cures will be obtained in the case of syphilis through the *Wassermann* reactions and other serological reactions. These reactions

g: carried out at the Serum Institute and are executed free of charge or for a small
s.n. Employment of the reaction is therefore so general that it is used practically



ays on patients suffering or suspected of suffering from syphilis. How much the
employment of the reaction has increased is illustrated by the following diagram :



The reaction is, as a rule, positive in about one-fifth of the cases ; this is because the serological examination is made very extensively, and maternity homes and hospital departments make it on all their patients. All syphilitics have their blood examined at the same laboratory, *viz.* : the State Serum Institute, which has a reliable and absolutely secret register. This system was proposed by Chief Physician *Jersild*. The registration gives :

- (1) The patient's sex ;
- (2) " " year of birth ;
- (3) " " month of birth ;
- (4) " " birthday ;
- (5) First initial of the patient's surname ;
- (6) Date when syphilis was first diagnosed ;
- (7) Name of doctor or hospital where diagnosis was first made.

These particulars are sufficient to identify the patient, with some few exceptions. Information regarding the treatment of the patient, the result of the serological examination, etc. is filed. This system has been in use since 1921 and the file contains names of about 35,000 patients, though it does not contain the total number of syphilitics in Denmark, as many older cases are not, and are not likely to be, registered.

The advantage of the filing system is that a control can be kept of the number of cases notified to the health authorities (Diagrams III and IV), the figures of which are certainly too high, while those of the file are too low. In 1922, 2,634 cases were reported, whilst the figures shown by the file were 1,620.

REGULATIONS REGARDING MARRIAGE AS A FACTOR IN THE COMBATING OF VENEREAL DISEASES.

As an important factor in the combating of venereal diseases, it may be mentioned that at the beginning of 1923 an Act was passed stating that marriage could be contracted only if the contracting parties could give a declaration affirming that they were not suffering and had never suffered from venereal disease ; if they could not give such a declaration they had to give a declaration that the disease was cured or that the person had been informed by a medical man of the danger of infection. The value of the protection thereby afforded is, of course, very doubtful.

THE TRAINING OF DANISH DOCTORS IN VENEREOLOGY.

Everyone sitting for their official medical examination must have gone through a three-months clinic course in venereology, finishing with an examination, which they must pass although no marks are given. The official doctors who undertake the examination and treatment of venereal patients all attend — at intervals of a few years — a supplementary course in Copenhagen, at which, among other things, venereological lectures and demonstrations are given to keep them up to date in their branch of their profession.

The Danish General Medical Union stipulates that specialists must have been employed for at least three years in a specialist branch for venereal diseases.

The Danish State began very early and resolutely to take up the struggle against venereal disease, which it has carried through in a purposeful manner, availing itself of all the experience gradually gained. The struggle has demanded, and still demands, considerable pecuniary sacrifices, but it has not been fought in vain. A noteworthy decline in the number of cases of syphilis proves this, and their number can be regarded as an indicator of the total number of venereal cases. The rural population is now, practically speaking, free from these diseases. The original shyness in seeking medical advice has disappeared. Patients are treated with the same care and respect as all other sufferers, and in Denmark no foreigner applies in vain for free treatment for venereal disease.

CANCER IN DENMARK

BY JOHANNES FIBIGER,

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President of the Committee of the Danish General Medical Association
for Cancer Research.*

I. INCIDENCE OF CANCER.

Denmark is one of the countries of Europe in which the morbidity of cancer is very high.

In 1922, for example, 4,659 deaths were due to cancer in *Denmark proper*. In that year the population of this part of the Kingdom is estimated to have been 3,322,700 and the number of deaths 39,461. The number of deaths due to cancer represents 11.8 per cent of the total deaths in that year, and the cancer death-rate was as high as 140.2 per 100,000 inhabitants. The total figures for tuberculosis during the same period amounted to only 8 per cent and 94.6 per 100,000 respectively.

The *Committee of the Danish General Medical Association for Cancer Research*, which was founded in 1905, organised a general enquiry into the morbidity of cancer in *Denmark proper* and also in *Iceland* and the *Faroe Islands*. It took a census of cancer cases receiving medical treatment on one particular day. As regards the census in Greenland, which will be referred to later, the enquiries had to be extended over several years.

In *Denmark proper* this census was taken on April 1st, 1908¹. More than 90 per cent of Danish doctors replied to the questionnaire sent to them, and the census showed that about 43 per 100,000 inhabitants were suffering from cancer. This is the highest rate ever found in any country.

The information obtained confirmed the extremely high morbidity of cancer in Denmark already shown by the death-rate. Nevertheless, before assuming that the incidence of cancer is actually greater than in other countries, we must remember that it is easier to determine the number of cases of cancer in a small country, where there are not only numerous hospitals and dispensaries but also a very large number of doctors, and that there is no difficulty in obtaining accurate information from these sources.

The census taken on April 1st, 1908, in the *Faroe Islands*, situated north of Scotland in Lat. 62° N. was not a success, as on that day two doctors were away travelling and so were unable to supply particulars. The number of cancer cases recorded in the census amounted to four out of the 18,000 inhabitants of these islands. A further

¹ "Causes of Deaths in the Kingdom of Denmark, 1922". Medical Statistical Office of the Danish Directorate of Health.

² "Beretning om den almindelige danske Lægeforenings Cankerkomité's Virksomhed, 1909". Zeitschrift für Krebsforschung, 1909.

s. taken with the assistance of all the doctors in the Islands on April 1st, 1911, led seven cases of cancer, or 39 per 100,000 inhabitants, as compared with 43 in Denmark¹.

The *Danish Committee for Cancer Research* has also undertaken enquiries into the occurrence of cancer in the Arctic country belonging to Denmark, namely, *Greenland and Iceland*. The inhabitants of the former, being for the most part pure Eskimos, have hitherto been regarded as very little, if at all, susceptible to cancer. The district of *Angmagssalik* (native population about 637) had to be omitted from enquiry, as there are no doctors and it is situated on the east coast, one of the inaccessible parts of Greenland. The enquiry had therefore to be limited to the settled districts on the west coast of Greenland, and even in these regions the great difficulties encountered rendered it impossible to take any accurate census of cancer. The west coast district is in parts as much as 200 kilometres broad and extends from Lat. 60° to Lat. 74° N., being about 1,400 kilometres long. In this district, the inhabitants of which number only about 13,500 persons, living in 170 villages and colonies, there are not more than seven doctors to carry out the work of medical inspection. These have to make their journeys of inspection in motor-boats — often among icebergs and floes — or in sledges drawn by dogs and the mean temperature in winter varies between —17° and —20° Cent., and may fall to —42° Cent. or even lower.

Nevertheless, it has been possible, as a result of the enquiries carried out in the period 1911-1916, to obtain not only reports from all the doctors and from every district on the west coast but also, in several cases, preparations and specimens of tumours, the true cancerous nature of which was revealed by histological examination. In the period 1911-1916, nine cases of cancer in all were noted among the 13,500 inhabitants of the above-mentioned districts, and in the period 1911-1920 more than 50 cases of benignant tumour.

It has therefore been established as a result of these enquiries (the details of which are published either in the Committee's own reports, in the *Bulletin of the French Association for Cancer Research* or in the "*Zeitschrift für Krebsforschung*"²) that neither benignant tumours nor cancer itself are by any means rare in Greenland. Of particular interest are the reports sent in by the Greenland explorers *P. Freuchen* and *Nud Rasmussen* on a case of uterine cancer discovered by *Dr. Hunt* in the *York* district. This case is proof of the existence of uterine cancer among the Eskimos in this region, which is the most northerly part of the inhabited part of Greenland. The investigations also show that, allowing for the relatively short length of life among the population of Greenland, cancer is in reality so widespread there that its incidence does not differ very appreciably from that in countries in which cancer is a common disease. Further researches will be carried out in order to corroborate the correctness of this view.

Lastly, on May 1st, 1908, the *Danish Committee for Cancer Research* took a census of the Kingdom of Iceland, which is united to Denmark under the same crown. The island of Iceland is situated between Lat. 63.5 N. and 66.5 N., and has an area of more than 102,000 square kilometres.

This census was carried out under the direction of *Dr. G. Bjørnsson*, head of the Public Health Service, to whom data were sent by all the doctors in the island. The number of cases of cancer recorded amounted to 23 out of a total of 83,000

¹ Beretning om den almindelige danske Lægeforenings Cankerkomité's Virksomhed, 1912. *Zeitschrift für Krebsforschung*, 1913.

² Beretning om den almindelige danske Lægeforenings Cankerkomité's Virksomhed, 1922. *Bulletin de l'Association française pour l'Etude du Cancer*, 1923. *Zeitschrift für Krebsforschung*, 1923.

inhabitants, *i.e.*, 28 per 100,000, as compared with 43 in Denmark ¹. As Dr. Björk points out, this difference is perhaps only an apparent one, because the inhabitants of isolated districts of Iceland, where the population is very scattered, very seldom call in a doctor.

In any case, the information which we have obtained from the census shows, contrary to the view once held, the morbidity of cancer in Iceland is very considerable.

In *Denmark proper*, the relative incidence of cancer in the different parts of the country is on the whole similar to that generally found in most other European countries. The most frequent forms are cancer of the stomach, cancer of the mammary gland and uterine, cutaneous and intestinal cancer, and of these the most frequent is cancer of the digestive tract.

The so-called "occupational" forms of cancer, several of which are common in various industrial countries in Europe, are non-existent in Denmark, which is a cultural country.

Cancer of the stomach is also common in the *Faroe Islands and Iceland*, but, according to the figures for Greenland, not a single case has been found in that country in the reports for the years 1911-1920, Greenland doctors mention only very few cases in which there were grounds for diagnosing cancer in the digestive tract.

In spite of this, the rare occurrence of these forms of cancer observed in Greenland up to the present may only be apparent and may be due to the same causes as are believed to be responsible for similar phenomena in tropical countries, *viz.*, the comparatively short lifetime of the inhabitants, whereby the number of cases of intestinal cancer is reduced, and the enormous difficulties which not only prevent the carrying out of a general medical inspection in these countries but also render it peculiarly hard to obtain reliable diagnoses of cancer of the digestive tract. These difficulties are enhanced by the more or less marked repugnance of primitive peoples to medical aid for internal complaints.

II. MEASURES TAKEN FOR THE TREATMENT OF CANCER.

The question of the necessity of establishing in Denmark special institutions organised solely for the treatment of cancer patients (hospitals, nursing homes, sanatoria, etc.) has been discussed on several occasions. The Danish Committee for Cancer Research instituted an enquiry into this subject among Danish doctors particularly interested in the proposal. Neither the results of this enquiry, however, nor the discussions held in connection with it proved favourable to the establishment of such institutions.

One of the reasons for this is that in Denmark every effort is made to conceal the diagnosis from patients suffering from cancer, as the generally accepted medical opinion is that the disastrous effect produced on the patient if he learns the true nature of his disease must as far as possible be avoided.

A further argument against the necessity of founding special institutions for the treatment of cancer is that most Danish hospitals do not object to the admission of cancer patients, and also that medical assistance can be obtained without difficulty and is generally resorted to throughout Denmark proper; moreover, among the well-to-do and the poorer classes of the population the large majority of persons

¹ Beretning om den almindelige danske Lægeforenings Cancerkomité's Virksomhed, 1912. Zeitschrift für Krebsforschung, 1913.

ers of provident societies to which specialists are attached (see Kuhn, "The Law of Health Insurance Societies in Denmark").

The law on the free treatment of poor persons suffering from chronic diseases also provides facilities enabling cancer patients to obtain the necessary treatment.

The X-ray treatment of cancer has, of course, led to the founding of institutions which take a large number of cancer patients.

The *Finsen Medical Institute*, for example, has for many years been applying therapeutic treatment to cutaneous cancer, and this treatment is now almost invariably combined with *Röntgen-ray* treatment.

The *X-ray treatment of cancer* is applied both in the hospitals at Copenhagen and in the towns and also in provincial hospitals and private clinics. This method is also employed at the *Finsen Institute* and, as will be seen later, at the radio-therapeutic

The *curie-therapeutic treatment* is organised in Denmark by the *Danish Radio-therapeutic Foundation*, which was established in memory of King Frederic VIII and under the patronage of His Majesty King Christian X. This Foundation, which was constituted in 1912 under the presidency of *M. Jacob Appel*, formerly Minister of Education, is under the joint direction of doctors and other persons representing all differing social classes.

The original object of the Foundation was to obtain funds for the purchase of a certain quantity of radium-element to introduce the Curie treatment in Denmark.

The necessary funds were obtained partly through a public subscription organised throughout Denmark and partly by means of a Government grant, and the Foundation opened in 1913 to open at Copenhagen its first centre for the Curie treatment.

Similar centres were established shortly afterwards in the towns of Aarhus and Odense. These centres were intended primarily for the treatment of cancer, but in view of the objections to the establishment in Denmark of special institutions for the treatment of cancer, non-cancerous affections for which treatment by radio-active substances is beneficial were also admitted to the centres; further, the necessary equipment was installed for applying Röntgen treatment either alone or in combination with other methods.

The Copenhagen hospitals were allowed to lend their radium preparations, which enabled hospital doctors to observe for themselves the effects of the Curie treatment, and at that time was new.

The quantity of radium available for these centres, however, soon proved insufficient and the general working conditions were not satisfactory. We need only mention that the centre did not possess sufficient beds to accommodate even a few of its patients.

In 1920, the situation had reached a stage when it was considered absolutely necessary to appeal once more to the public and to the Government for sufficient funds to purchase the necessary quantities of radium-element and establish and run a clinic on entirely modern lines. A national subscription was opened in 1921 and, with the aid of a Government grant of 500,000 Danish crowns, a sum amounting in all to more than two million crowns was obtained.

With these funds, about two grams of radium-element were purchased, and a radio-therapeutic centre was established in a villa previously occupied by the Finsen

Medical Institute, to take the place of the former radium institute at Copenhagen agreement was at the same time made with the Finsen Institute under which doctors of the latter institute engaged in phototherapeutics assist, each in his special branch, those employed in the new institute of curie-therapeutics. The benefits of co-operation were thereby secured by the two institutions, both of which employ the method of treatment by radiation.

The new institute of curie-therapeutics was inaugurated in 1922. It provides accommodation for the treatment of both out- and in-patients, the latter in wards with accommodation for 24 patients. Besides the wards and the operating theatre there is an X-ray theatre with an apparatus for deep radiotherapy, which, at the institute, is frequently combined with curie-therapeutical treatment.

The latter is largely applied by means of radium salts ; as regards the use of radioactive substances to hospitals, which is the other main object of the institute, the latter possesses no less than one gram of radium in solution, the emanation of which is supplied to hospitals upon application.

The production of emanation, the testing of the strength of preparations and similar work is carried out in laboratories under the charge of physicists. A surgeon and a radiologist are attached to the institution for superintending medical work ; as a result of experiments made some time ago in the treatment of internal diseases, the institute now employs, in addition, a specialist in that branch of medicine.

In addition to the medical staff, the institute employs an anatomo-pathological assistant, and, by its agreement with the Finsen Institute, obtains the assistance, when necessary, of the specialists in dermatology, ophthalmology and oto-laryngology who are attached to that institute.

In order that the Institute of Curie-therapeutics should not, for the patient's sake, be considered by the public as a cancer clinic where cancer cases alone are treated, the institute also admits patients suffering from benignant affections.

The diagnosis and histological examination of neoplastic tissues removed by biopsy, curettage, or major surgical operations is undertaken both in the Danish general hospitals and in many clinics by prosectors and competent assistants, who are specially engaged and remunerated for this work. The histological analysis of tissues removed from paying patients attended by doctors in private practice is undertaken upon application by the doctor attending the case and at the expense of the patient.

Since 1909 the Committee of the Danish General Medical Association for the Study of Cancer Research have undertaken to carry out free of charge *a histological examination of tumours and tissues in which cancer is suspected* and which have been taken from poor patients who have not been examined in clinics or hospitals and cannot afford to pay for examination. The examining doctors authorised and engaged by the Committee are the most competent anatomo-pathologists in Denmark. There are at present six of these examiners in all and they are paid 9 crowns by the Committee for each histological examination. The professor of pathological anatomy, who acts as director and sometimes as advisory examiner, receives no remuneration.

The Danish Government has invariably defrayed the necessary expenses and still does so. The sum appropriated for this purpose by the Government in 1924 was 9,000 Danish crowns.

The following is the procedure to be followed with regard to examinations :

A doctor desiring an examination gratis must apply in writing to the Institute of Pathological Anatomy of Copenhagen University. He receives by return of post :

- 1) Order cards (*cf.* order form below) on which he enters particulars of the patient ;
- 2) Instructions for the preservation and despatch of specimen tissues removed for histological examination (*cf.* instructions below) ;
- 3) A list of pathologists authorised by the Committee to undertake examinations, with private addresses and the addresses of their laboratories.

Having filled in the order card, the doctor sends it, together with the specimen tissues to be examined, direct to the examiner he has selected.

The examiner, after completing the examination :

- 1) Sends the doctor as soon as possible a notice of the results of the examination ;
- 2) At the same time he enters the result (together with all details) on the order card and sends the latter, accompanied by microscopic preparations (where necessary, the remainder of the anatomical specimen, the paraffin cubes, etc.) to the Institute of Pathological Anatomy. The preparations, accompanied by the corresponding order cards, are deposited with the secretary of the Committee (at the Institute of Pathological Anatomy), which places them in its collection and retains possession of them. The Committee reserves the right of utilising the preparations, but the doctor who forwarded the specimens may also make use of them upon application. The object of the free histological examination is accordingly twofold :
 - 1) The histological diagnosis of tumours in all cases in which patients cannot afford it ;
 - 2) The formation of a collection of preparations, with relevant particulars, to be used for scientific research.

Instructions by the Bureau of the Committee.

Method of effecting the Excision, Curettage and Despatch of Suspect Tissues.

When excising a suspect ulcer, please send, where possible, the adjacent healthy tissue. After excision, a non-ulcerated suspect tumour should be sent, if possible, in its entirety.

In cases of cancer of the body of the uterus, please send tissue taken from the body-walls, and a complete section, from top to bottom, of the tissue lining the cavity.

When removed, tissues must be placed in fixing liquid as soon as possible and preferably immediately after removal. An alcoholic solution of *formaldehyde* (one part commercial formaline to three parts alcohol at 70) is recommended as a fixing liquid. If no formaline is available, use pure alcohol. No other substance should be employed, even temporarily.

Bottles must be carefully stoppered and the top covered with water-tight material well fastened down. To avoid mistakes, each bottle must bear the name and initials of the patient and date of despatch.

The specimen must be sent direct to one of the Committee's examiners.

The specimen must be accompanied by an order card properly filled in.

The examiner will in no case undertake a microscopic examination until he has received the order card.

The doctor will be informed by the examiner of the result of the microscopic examination.

name of the patient, if given, is to be regarded as confidential.

Specimen Order Card.

To the Committee of the Danish General Medical Association for Cancer Research.

(Please write clearly.)

....., medical practitioner, (address)..... hereby applies for a microscopic examination for cancer, sarcoma, or malignant tumour in the accompanying tissue removed by, date preserved Person from whom removed¹

1. Non-paying patient (name or initials)
2. Sex
3. Age
4. Married or single
5. Address
6. Profession
7. Presumed seat and nature of tumour.....
8. If microscopically examined previously, state results.
9. Have the patient's husband (wife), children, brothers or sisters suffered from cancer malignant tumours? If so, in which organ?
10. Have any persons living in the same house or in the neighbourhood suffered from cancer malignant tumours? If so, state nature of tumour, date and organ.
11. Are there any grounds for assuming infection?
12. In case of a female patient, has the patient been a mother or has she had a miscarriage?
13. Does the history of the case show any other facts which merit attention, *e.g.*, alcoholism, syphilis, excessive smoking, chronic irritation, malnutrition, etc.
14. At what period did the tumour begin to develop?
15. Is the patient suffering or has he previously suffered from any other chronic disease? If so, state disease.

Eight thousand three hundred and twenty-four specimens forwarded from the provinces in the Kingdom of Denmark proper were examined between October 1, 1909, and January 1st, 1924. Specimens have also been sent by doctors from Greenland, the Faroë Islands, the former Danish colonies in the West Indies, and Iceland.

The largest number of specimens were obtained by curettage of the uterus; next come excisions from the mammary gland and the skin; the remainder included specimens taken from practically all the other organs.

The examinations carried out gave the following results:

Carcinoma	2
Carcinoma (doubtful)	
Sarcoma	
Sarcoma (doubtful)	
Malignant tumours of other kinds	
Benignant tumours (and doubtful malignant tumours)	1
Inflammation, necrosis, hæmorrhage, tuberculosis, actinomycosis, syphilis, lymphogranulomatosis, hyperplastic alterations of the endometrium, etc.	2
Alterations of the endometrium due to pregnancy	
Normal tissues	
Doubtful	

Out of the 8,324 specimens examined, 4,469 were diagnosed as due to tumours, of which not less than approximately 2,700 were malignant.

The foregoing regulations, which have been in force for about fifteen years, may be considered as entirely satisfactory; neither doctors nor examiners have met with any adverse criticism of them.

¹ The name of the patient, if given, is to be regarded as confidential.

HEALTH COMMITTEES AND THEIR ACTIVITIES

BY JOHAN LEMCHE,

District Medical Officer.

By the Act of January 12th, 1858; the Promotion of Sanitary Regulations Act, a new era was opened in Denmark as regards hygiene, which certainly effected to a great extent the daily life and welfare of the public, by making possible the introduction of sanitary regulations containing provisions for the minimum sanitary measures to be taken both by the public authorities and by inducing private individuals always to keep in view the old maxim "Prevention is better than cure".

The Act does not prescribe what hygienic measures are to be taken; this, to a certain extent, is left to the individual municipalities (rural or urban), which are authorized to adapt — "according to the particular circumstances extant at each place" — measures drawn up by the Ministry of Justice (Home Office), subject to the approval of the Ministry. Should the proposals contain any inadmissible or illegal provision, they are returned to the municipal council (in the rural districts to *Sogneforslunderska* parish management), after 1868 called "*Sogneraadet*" (parish council) for further consideration. Should the Minister a second time consider the regulations unsuitable, he gives the municipality the choice of accepting the regulations with the omission of the rejected provisions or of rejecting the regulations *in toto*.

The chief City Medical Officer of Health or the County Medical Officer have to advise, without the right to vote, for the discussion, and other medical men or experts may also be asked to attend; likewise, the County Sheriff and a deputy from the County Assembly may attend. Alterations and amendments are subject to the adhesion of the public authorities.

When sanitary regulations are approved they become compulsory in the municipality in question, and originally the municipal or parish councils could not on their own authority revoke the provisions of the Act; unfortunately, this clause was altered by the Act of March 28th, 1868, when a provision was introduced that the regulations might be revoked in any single year by a resolution of the municipal or parish council, which merely has to inform the minister of the adoption of the resolution. In several cases, this option has been made use of where the municipal or parish council has objected to the provisions of the sanitary regulations.

The Act is the first to cover the general sanitary conditions of the whole country. Previous decrees, government writs, posters, writs from the Ministry of Justice, health authorities' decisions, Statutes, Acts, etc. had as a rule concerned epidemic diseases or certain trades dangerous to health (Act of March 10th, 1852). The latter Act only applied to Copenhagen proper but empowered the Minister of Justice — "after the advice of the municipal authorities and the sanitary police have had the opportunity of giving their opinion — in conformity with the provisions of the Act under review, to provide for Copenhagen the measures that in individual localities are thought advisable".

This provision is of importance to the sanitary regulations resulting from the Act of January 12th, 1858, for the Minister of Justice utilises this power to incorporate the provisions of the Act in the sanitary regulations of the individual municipalities, thereby making it applicable outside the metropolis. Moreover, nearly all sanitary regulations have contained provisions relating to the so-called "offensive trades" *e.g.*, slaughtering, tallow-rendering, tanning, preparation of hides in which train oil is used, manufacture of parchment-catgut and glue, bone-boiling, bone-burning, train-oil-boiling, starch manufacture, chemical factories for the preparation of mineral acids, salts, other preparations, paints, dyes, manures, etc., also tallow-chandlery, storing of salted hides, soap-boiling, chicory manufacture, etc.

I will later return to these questions, but the attempted legislation on epidemic diseases will have to be dealt with elsewhere. It is practically certain that the vicious march of Asiatic cholera through various countries in the 'forties and 'fifties, more especially the virulent epidemic in Copenhagen in 1853, produced the Act of January 12th, 1858.

The first three sanitary regulations recognised under this Act as far as is known were: those of Elsinore (September 6th, 1860), Copenhagen (October 16th, 1860) and Lyngby (autumn 1860), followed by the Parish of Taarnby on Amager (March 27th, 1861).

During the first 30 years, the health committees nominated under these regulations — in co-operation with the remaining health authorities, Chief of Police and Medical Officer (County Medical Officer or chief City Medical Officer) — were responsible for dealing with epidemics, but the "Epidemic Act" of April 20th, 1888, transferred to the local epidemic committees this duty.

In rural municipalities a local and a county epidemic committee must be established, but a health committee only where recognised sanitary regulations exist. In those urban municipalities (including Frederiksberg and Marstal) where sanitary regulations are in force there must be a health committee, which also constitutes the local epidemic committee; should the urban municipality have no recognised sanitary regulations, it has no health committee, and therefore a local epidemic committee is compulsory. In both cases the municipality has a county epidemic committee in common with the other municipalities of the county. In Copenhagen there is a health committee which also acts as the local epidemic committee, and the municipal council constitutes the county epidemic committee.

Whilst these epidemic committees will be dealt with elsewhere, a more detailed account will be given of the actual "health committees" nominated in accordance with the sanitary regulations — their composition and duties, as also a short explanation of the Medical Officer's connection with and influence over them.

In Copenhagen and other urban municipalities where the health committees are established at the same time the local epidemic committees, the Chief of Police — just as is the case in the rural local epidemic committees — is the chairman; in the rural municipalities the chairman is elected from among those members of the health committee or health commissaries chosen by the parish council from among the inhabitants (men and women) of the municipalities who have a vote. The number of members

vary, generally about three or five, but in densely populated municipalities, especially in the neighbourhood of Copenhagen, several have up to 13 (*Gjentofte*). The work of the health committees is simplest in the rural municipalities, I will concentrate on these and, in conclusion, briefly mention some peculiarities of the metropolitan and the urban health committees.

Almost all the sanitary regulations begin with the provision that "besides the public sanitary authorities (Chief of Police, Medical Officer, County Sheriff, Ministry of Justice), the local supervision of hygiene is the duty of the health committee". The committee is empowered, by the sanitary regulations of the municipality, to take any measures necessary in the interests of hygiene. All those possessed of franchise, men or women, in the municipality under 60 years of age are bound to accept election to the committee, unless they are able to give the parish or municipal council satisfactory grounds for refusal. They may be re-elected at the end of their term of office (as a rule from three to four years) but are not bound to accept election until a period of the same length has elapsed. The chairman (and at times a vice-chairman) is elected by and among the members themselves; either alone, or with assistance he keeps a record of the proceedings, which is signed by all members present. Sometimes a certain minimum number of meetings is specified in the regulations, but generally it rests with the chairman to decide when meetings are to be held. Decisions are taken by majority vote; in cases of equality of votes, the vote of the chairman decides; no resolution can, however, be taken unless at least half of the members are present.

The Chief of Police, the District Medical Officer — as a rule the Municipal Medical Officer — the municipal engineer the housing inspector, the chairman of the parish council and at times the chairman of the Roads Committee have the right to be present at the proceedings of the committee, but without a vote.

In the municipal annual budget a sum is generally placed at the disposal of the health committee, but if a measure is taken considered necessary on hygienic grounds by the health committee, the sanction of the parish council must be obtained if it entails expense to the municipality; in urgent cases, however, the expenditure can be incurred with the sanction of the chairman of the parish council alone.

The members — each in respect of his district — must supervise the carrying-out of the resolutions. They are at all times entitled to investigate any question within the scope of the sanitary regulations both on public and private property. In some municipalities policemen are employed as paid assistants to the committees.

Offence against the regulations or failure to comply with the orders issued are treated as police cases and are punishable by fine or imprisonment. Dispensation from the sanitary regulations can be obtained from either the county or the Ministry, but, as a rule, only with the approval of the committee. Complaints against the committee are settled by the county court or by the Ministry of Health.

We shall now proceed to a more detailed review of the various work of the health committees.

Roads and drains are under the supervision of the health committee. Before road-making and drainage are started the committee's approval of plans and drawings must be obtained. Should private roads be neglected to such an extent that they become a danger to health, the owners may be ordered to carry out repairs. The health committee supervises the repairs from the point of view of cleanliness.

As the regulations generally include a provision to the effect that "satisfactory drains for the conveyance of rain-slop, waste and ground-water shall be found at every building", and as the details concerning these are decided by the health committee, the latter is — under the regulations — empowered to remedy any defects which may occur. Practice and theory, however, do not always correspond. Difficulties in enforcing these provisions have arisen — especially in more recent years — owing to the abnormal economic conditions resulting from the war and the housing shortage, partly because of the many evasions of the law and the regulations in building operations. The committees, despite persistent efforts, have not yet succeeded in establishing normal conditions. Upkeep of roads and drains is incumbent on the owners of the various sites should no other arrangement have been made.

The housing committee cannot give permission for the erection of any building till the health committee has issued a certificate to the effect that the provisions concerning drainage have been complied with and that sufficient and wholesome water for drinking purposes is supplied. In cases where water from the public supply is laid on to a house, rules are established for the digging and construction of wells, as well as to their position in relation to dung-hills and drains. The health committee is empowered to have samples of the drinking water tested by analysts. This is generally carefully done and the sample is sent to a laboratory (university, Stein, or the like). Should the water prove dangerous to health, the owners may be ordered to take the necessary measures for remedying the defects (purification, rebuilding, deepening, isolation, etc.) The supply of water may be temporarily or permanently cut off. All public water supplies in villages are supervised, and all conveyance to these of polluted discharge from stables, dung-hills, etc. is prohibited. Should the committee consider the water supply of a town insufficient, the town is provided at the expense of the municipality with a suitable number of public wells.

While the committees — especially in the rural municipalities — are not generally empowered to veto a building enterprise in consequence of the defective nature of the site, the more advanced municipalities have inserted provisions in their regulations according to which the site is subject to the approval of the committee. Thus, especially where the site is damp or consists of a dumping-ground, appropriate measures may be prescribed. The same applies to sites previously used for cemeteries. The power of the committee, however, covers not only the present but also the future, in consequence of certain regulations laying down that on every site actually intended or presumably intended for building purposes only substances innocuous to health, such as earth, gravel, sand, fragments of bricks, etc., may be deposited.

If the disposal of sewage is of importance to the population, the extreme disposal and removal is no less so. The task is twofold, *viz.*, removal of the night-soil and the house refuse. In cases where the sewers are capable of receiving discharge from water-closets, the former task is solved in the most satisfactory manner, but when this is not the case other measures have to be taken.

At each building there has, of course, to be the necessary latrines or privies conforming to the prescriptions laid down by the health committee and placed at a suitable distance from dwelling-house, kitchen larder, other places where food is kept and public roads. As a rule such latrines are furnished with tanks that have to

ried regularly either by the owner or by public or private companies. In most cases this removal takes place in the old-fashioned way by emptying the tanks either in the yards or in the roads, but in some places — in the larger towns — the conditions have so far improved that the tanks are not emptied on the spot but exchanged for others which are empty and cleansed by steam. However, this can, as a rule, only be managed in places where the entire removal, including provision and replacement of tanks, is done in co-operation with the municipality. For the removal the owners have to pay an annual sum for each tank, or per seat, as it is called. One seat is generally allowed for every four households; and, at any rate, one seat for twenty persons; in many places, however, people have realised the necessity of increasing the number of the seats till every household has its own seat. In cases where water-closets are introduced, this requirement is, as far as possible, complied with.

As a rule a so-called *Pollerum* (nightsoil room) is attached to every building — in some places, however, only where the number of households exceeds four — in which the contents from the urinals, sick-closets or the so-called dry-closets of the houses are collected for removal. Their number is decided by the health committee.

The construction of these latrines and *Pollerum* are decided by the health committee according to fairly fixed rules or special regulations in force. The main requirements are that they must be placed on a cement foundation so that they can be sealed — e.g., drain into a sewer — that the seats are covered with a lid, and that they are provided with a ventilating shaft. Cleansing and rinsing are done by the owner. In places where the scavenging is done either by contractors or by the municipal authorities' own workmen, the emptying takes place at definite intervals, the tanks are removed before they are full, and the removal must, in the more densely populated municipalities, take place in closed, solid lorries.

Latrines or privies must not as a rule be placed upstairs. However, they are still to be found in a number of places, but ought to be converted into other kinds of conveniences. Conversely, the so-called marine-closets, or dry-closets and peat-closets with two tanks, one for urine and one for faeces, are allowed and in use in many places, especially where water-closets have not been introduced.

Impermeable floor, direct lighting (except in buildings of older date), ventilating connected with chimney or issuing above the roof-ridge of the house are as a rule required in water-closets and in other closets. Water-closets may be allowed according to special regulations.

In hotels, factories, workshops, schools and other buildings where these things are especially in demand the health committee may require the erection of adequately constructed urinals conforming to certain rules prescribed by the committee, such as a concrete foundation, metal or slating covering along the sides, and draining into a sewer.

The health committee may also order sanitary measures for removal of house refuse, including grounds for refuse must as a rule not be placed within 125 metres from habitations. No refuse must be thrown into the sea.

Further, the health committee may prescribe rules for the placing of manure pits in houses. Should they be placed within a distance of 125 metres from another

person's house, their bottom and sides must be impermeable to water and raised above the ground. If the manure is not constantly removed, the pits must be provided with drains impermeable to water leading to a liquid-manure tank also impermeable to water. Offal, carcasses or other offensive refuse are dealt with by special provisions.

Removal of manure or other offensive refuse must be carried out satisfactorily. Should any refuse be dropped in a town or more densely-populated district, the person responsible is bound to cleanse the street or road. If the manure is specially offensive, the health committee may order it to be removed before 9 a.m. between May 1st and November 1st. Latrine manure must as a rule not be spread in the three summer months, and other specially offensive manure must be ploughed or harrowed in immediately on spreading. During epidemics the health committee is empowered to take measures with regard to the position of manure pits, removal of manure, etc.

In more recent years some municipalities have prescribed rules for the construction of cowsheds and stables, nay, even for rabbit-enclosures, poultry-yards, poultry-houses and kennels. In many places, however, such sanitary regulations only deal with pig-keeping and piggeries, but with regard to these, more or less comprehensive provisions are to be found in probably all sanitary regulations of this country. In certain places, especially the towns and more densely populated areas of the municipalities, pig-keeping may be entirely prohibited should the health committee and municipal or parish council agree, except where pigs are kept in connection with farming. In this, as in almost all other cases, the legislative power watches over the "staple" industry of the country. This care for the agricultural interest is apparent here and there in clauses in our building and sanitary regulations; it was more apparent in earlier days, *e.g.*, the first building regulations in several places did not refer to farms.

The health committee may, of course, lay down rules as to position, construction, cleansing, size, etc., of the piggeries and the number of pigs to be kept.

In respect to bakehouses, confectioneries, shops from which bread is sold, etc., the duties of the health committees were considerably limited by the special regulations of February 26th, 1910, contained in the Bread and Cake Bakeries and Confectionery Act, April 6th, 1906. By this Act, the supervision of these establishments was placed under the control of the Factories and Workshops Inspectors. According to paragraph 17 in the special regulations, the more stringent provisions of the sanitary regulations may be applied, and the health committee and the Medical Officer are required to notify the police as to transgressions of the regulations. These provisions were undoubtedly considered as an improvement on the previous conditions, and in some places they certainly are an improvement, but it cannot be denied that where the control was previously carried out in a fairly satisfactory manner by the health committees, the transfer of the power to the Factories and Workshops Inspectors has to a great extent weakened the sense of responsibility in the health committees. Moreover, it can even be maintained that the present inspection acts in a completely satisfactory manner. The Factories and Workshops Inspectors assert that they can only inspect the premises of each bakehouse and confectionery *once* a year! This is far from satisfactory, and some of the health committees, especially those in the larger towns

municipalities, have consequently appointed special persons to supervise these establishments, in conjunction with their other work. The correct procedure would probably have been to place the purely technical supervision under the control of Factories and Workshops Inspectors and to leave the sanitary conditions to the health committees. The weakening of the authority of the health committees would have been avoided.

In the most comprehensive sanitary regulations, provisions as to the construction of equipment of bakehouses and shops from which bread is sold are included, and of these premises can be opened without the permission of the health committees.

Both in these sanitary regulations, as in those of the smaller municipalities, where provisions are not included, fairly strict measures as to cleanliness are in force, of which date back to the middle ages. When provisions such as " nobody may be kneaded in bake-houses " or " dough must not be kneaded with the feet " still appear in a number of sanitary regulations, one imagines oneself transported to the days of Shakespeare. In regard to the delivery of bread and the condition and structure of bakers' carts, many sanitary regulations lay down that control is to be exercised by the health committee.

Provisions regarding the sale of milk and of meat will be dealt with in other articles and therefore will be omitted here.

The committees have power to control all other food and luxuries and to order investigations. Such investigations are carried out by the public laboratories. For instance, during the year April 1st, 1922, to March 31st, 1923, 4,402 samples of various commodities, *viz.* : vinegar, cream, milk, fruit, meal, honey, coffee, cocoa, biscuits, lemonade, flour, cheese, sausages, fat, oil, sugar, tea, water-wine, etc., were analysed at V. Stein's laboratories ; action was taken in about 250 cases, but fines were only imposed in a few cases. They consisted mainly of minor offences, *e.g.*, a quantity of dried fruits was in a poor state of preservation, containing maggots, larvæ excrements, insects, and in one case also ferment — like micro-organisms ; in some preserved vegetables, traces of copper were discovered ; in a couple of samples sulphurous acid was found in two samples of barley meal, in 10 cases maggots, in 1 of these also cocoons ; four samples of sago meal contained mice excrements, and maggots ; four samples of sausages contained flour in excess. A sample of water contained hydric sulphide in such quantities as to be supposedly poisonous to fish ; of the remaining water samples, 16 were so impure that they were considered unsuitable for drinking. One sample of beer that caused poisoning was found to contain four per cent sulphate of copper. Four preservatives consisted of sodium sulphide (sulphide of sodium). These are comparatively minor infringements ; but the existence of the control excludes or minimises more serious offences. These investigations do not give an adequate picture of its usefulness.

Paragraphs 1 and 5 of the Act of March 10th, 1852, dealing with offensive trades which the Minister of Justice is empowered to extend the provisions of the Act to municipalities than Copenhagen — make these trades subject to the supervision of the committees. They may be established only at localities found suitable

by the health committee : their plant and working are subject to its regulations cannot, however, be prohibited as long as they are in the hands of persons who at the time the regulations came into force possessed rights to carry on the trade. Trade can pass into the hands of the widow and children.

Storage of dealers' and manufacturers' produce which is evil-smelling and proper for drying hides are subject to the supervision of the health committee. In other trades be considered to be obnoxious to their surroundings or to the public in general, *e.g.*, through noise or stench, the health committee is empowered to do the removal of these nuisances, and even under certain circumstances to forbid the continuance of the work or of the warehouse. Smoke from chimney-stacks — even from trains, etc. — can be dealt with by the health committee.

House hygiene and housing inspection is referred to in other articles. I need not say that even in municipalities where there is no housing inspection the tenants are not absolutely unprotected, for the sanitary regulations as a rule grant the health committee powers to prevent overcrowding and to see that the dwellings are safe and proof and that they can be heated in winter ; moreover, that there are sufficient windows capable of being opened and closed securely. The sleeping quarters of a servant must not be used as a dining room for others. The committee is even empowered to forbid the habitation of dwellings and premises dangerous to health.

Premises used for public serving and preparation of foods and houses in which quarters or rooms are let to households or individuals are placed under the supervision of the committee. The committee must frequently and at intervals inspect these and see that they are supplied with proper latrines and dustbins, also that they are fitted with the necessary sanitary arrangements — sinks, yards, drains, latrines, etc.

The committee superintends poor-law institutions, sanatoria, boarding-houses, schoolrooms, both public and private asylums, and in some municipalities matron's homes, children's homes, clinics, convalescent homes, etc.

No new or entirely rebuilt dwelling-houses can be occupied until the sanction of the health committee has been obtained. In latter years control has been exercised in the following manner : the housing committee will not issue a building certificate until the certificate of the health committee has been submitted, and before the health committee has issued the certificate no public bank (credit institution) will secure a mortgage on the building.

The health committee superintends cemeteries and must be consulted on the siting of new or the extension of old ones. It can demand that the ground-water under a cemetery be drained away. Its sanction must be obtained before a disused cemetery is used for other purposes.

Infringements of these regulations are dealt with as police cases, and are referred to the Ministry of Justice or in certain cases to the supreme court. Dispensation may be granted by the County Sheriff or the Minister of Justice after hearing the views of the parish council or the health committee.

A brief mention of the deputies' connection with and work on the health committee should be made. In cases where the Chief of Police is not — as in towns —

Chairman of the committee, he is as a rule only present at meetings at which specially important matters are to be discussed. This applies, in a similar degree, to the chairman of the parish or municipal councils and the municipal health officer. The municipal engineer attends as a rule at the committee meetings and also takes some part in its supervisory measures. On the whole he is an excellent mainstay of the committee, especially as he is generally well acquainted with the municipality, particularly in regard to drainage conditions. In many municipalities, the municipal engineer and the housing inspector being one and the same person, the work of the health and the housing committees are, through him, brought into closer relationship, which is highly beneficial; as the municipal engineer also frequently attends the meetings of the parish council and the roads and sewers committee meetings, an additional connection is thus formed between the various authorities of the municipalities. Where the work of the municipal engineer and the housing inspector is in separate hands, good relations between the housing and health committees may be lacking — although the chairman of the health committee is *ex officio* a member of the housing committee. This, at any rate in some places, is very detrimental to co-operation and diminishes the contact and feeling of solidarity that should exist between the various municipal authorities.

The Medical Officers' work and their connection with the committees must be mentioned. By the Medical Officers Service Act, April 21st, 1914, and the Instructions for District Medical Officers issued on March 31st, 1915, by the Ministry of Justice in pursuance of Section 5 of that Act, the District Medical Officer is the adviser to the judiciary and administrative authorities of the district and its town and parish councils. He must be consulted in all district matters demanding medical insight and must submit his advice if required. He may be required by the municipal councils to attend their meetings — without the right to vote — and *must* take part in all discussions regarding the sanitary regulations — also without a vote.

These provisions cause really very little inconvenience to the Medical Officers, at any rate in the counties; the state of affairs in towns is naturally different. The opinion is probably that the parish or municipal councils have not yet understood that it is their duty to call in the Medical Officers, and in many localities the Medical Officers do not feel inclined to bring this to the council's notice, because, in matters concerning the sanitary regulations when they *have* to attend, they can plead that proposals come from their superiors, the County Medical Officers and the National Board of Health. This is, however, hardly a sound argument, for it is far easier at an early stage of the discussion in the parish councils for the Medical Officer to change the meaning of the provisions than to get minor amendments introduced when the Council has done its work.

Reports, proposals, and complaints regarding the local sanitary conditions submitted by the District Medical Officer may be sent to the authority conducting or intending the matter, but must also be sent to the County Medical Officer should the matter concern sanitary conditions of a more general and vital importance to the whole district or other parts of the country.

The District Medical Officer superintends all institutions under the control of the local authorities, such as poor-law institutions, children's homes, working-class clubs, hospitals, sanatoriums, bakehouses, dairies, slaughter-houses, factories, etc. The District Medical Officer is naturally justified and bound to submit suggestions and

proposals for the remedy of defects and for improvements of sanitary conditions even when these are not included in any existing provision. Should his complaints and suggestions be disregarded, he should make a report to the authority in question, Chief of Police, health committee, etc., or, if necessary, submit a report on the case to the County Medical Officer.

It may seem that great powers are granted to the Medical Officer, but this authority in reality only extends to pointing out defects and to giving advice as to the remedy. Whether these are to be remedied depends upon other factors. It has, however, been proved that where the intervention of the Medical Officer is well founded and his recommendations justified, he can, as a rule, induce both the municipal and administrative authorities to take action. In this case, as in so many others, he merely reports and advises on the health committees in his official capacity, but without voting rights, except in the municipality where he is resident. He must, as far as possible, endeavour to attend all meetings of the health committees at which important matters are discussed and must be informed of the time and place of each meeting and of the most important subjects for discussion.

In spite of this limited authority, excellent and profitable co-operation between the Medical Officer and the health committees is no doubt ensured where personal relations are good, but it is essential that the members of the committee should not regard the official as a spy or inspector placed over them, or as a sort of super-health committee. They must find him the liberal-minded, well-intentioned, experienced health adviser he was meant to be.

To summarise : The work of the health committee and of the Medical Officer is to watch over the sanitary conditions in the municipality, especially with regard to sewerage and refuse disposal, public cleanliness in general, funeral service and cemeteries, building conditions, water-supply, preparation, storing and sale of foodstuffs and provisions, things which might constitute a danger to the health of the population; but whereas the health committee has the right of action, the Medical Officer, as a rule, can only submit his suggestions to the committee or the administrative authorities. Only in cases where the District Medical Officer considers that the introduction of sanitary measures is so urgent that their omission would entail eminent danger to human life or health is he empowered to *order* such measures; in such cases, he has to submit a report to the authorities concerned and to the National Board of Health.

The sanitary conditions referred to in this paper are mainly taken from some of the most advanced and most densely-populated rural municipalities, but the conditions prevailing in the remaining municipalities may be gathered from these. Nature and a closer examination would reveal some differences in the various sanitary regulations — especially in those of more recent date, which are generally more comprehensive than the earlier ones but are not necessarily more effective. It may safely be asserted that they are generally adapted to the requirements of the municipalities concerned by local people and consequently beneficial in that particular area. In a parish with a scattered population the requirements as to sewerage and refuse disposal, for example, need not be nearly so stringent as in a densely-populated area. In the provincial towns, the sanitary regulations are still more detailed, though in the rural towns they are on similar lines. In the larger provincial towns (Frederiksberg, Aar-

(dense) and the metropolis itself, special conditions prevail, *e.g.*, with regard to the supervision of boarded-out children, which devolves upon the health committee and is carried out by a number of women appointed by the municipal council but under the control of the health committee (especially the Chief Medical Officer of Health). Everybody who has been granted permission to receive a child must, before the expiration of 24 hours, notify the police station concerned to that effect. Removal, or cessation of board due to the death of the child or to other reason, must also be duly notified. In special cases (*e.g.*, the housing of the child with the grandparents) in which there is no inducement to make a profit, the health committee may waive the supervision. The municipality also supervises its children entitled to relief who are boarded out in another municipality through a so-called "Tilsynsværge" (supervising trustee) in the other municipality; in the case of girls and small boys the *Tilsynsværge* is as a rule a woman.

An account of the composition, procedure and work of the health committee of the metropolis is given in a special article.

MEAT INSPECTION IN DENMARK

BY H. C. MÖRKEBERG,

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Under the Act of January 12th, 1858, each municipality was granted power to arrange its sanitary conditions by means of sanitary regulations, subject, however, to the sanction of the Minister of Justice, and each municipality can thus decide itself whether it will establish a meat inspection or not.

Meat inspection in the modern sense was not established in this country till the end of the last century. In 1881, inspection was established in Copenhagen for meat exposed for sale, and in 1887, on the erection of a public slaughter-house, all slaughtering had to be undertaken there. Gradually provisions as to meat inspection were also incorporated in the sanitary regulations of other municipalities. However, the regulations for meat inspection were, to begin with, rather heterogeneous, and the municipalities did not *inter se* recognise each others' inspection, a fact which considerably hampered the meat trade.

Almost simultaneously with the establishing of meat inspection in the various municipalities an alteration in the export of cattle and pigs took place, in that, owing to prohibitive measures abroad, the exportation of slaughtered cattle and pigs took the place of the hitherto prevailing export of live animals.

A number of export slaughter-houses were erected all over the country and, to ensure that only sound meat should be sent abroad, a bill was passed in 1894 empowering the Government, through a system of export inspection, to prevent the export of any meat that was not of first-class quality. This bill, which dealt with fresh meat only, has been amended, last time in 1908, so that it now applies to fresh and salt as well as to smoked meat and offal and meat products obtained therefrom.

At the export slaughter-houses there is a quantity of offal that can most profitably be disposed of in the home market, but the disposal of such products met with obstacles in the municipalities where, in accordance with the sanitary regulations, meat inspection had been introduced; the offal could not pass through the meat inspection in the various municipalities according to the rules which claimed that the animals, *toto*, including internal organs, should be subject to inspection.

This was rather inconvenient for the producers, the butchers and the consumers, and an arrangement was made under the Home Meat Inspection Act, 1901, according to which meat of animals slaughtered at an export slaughter-house, or in a municipality in which meat inspection is established, could, when passed as first-class produce, be introduced into any municipality in any part of the country without

being re-inspected or subjected to further imposts. This Act was amended and succeeded by an Act passed in 1911, according to which also second-class meat of animals slaughtered at public abattoirs or export slaughter-houses could be introduced into municipalities all over the country where the local authorities had the right to re-inspect without, however, demanding further imposts.

We have thus two kinds of meat inspection, *viz.*, export inspection and municipal meat inspection.

1. EXPORT INSPECTION.

By the Act of May 27th, 1908, the Minister of Agriculture is empowered to take necessary measures for the prevention of export from this country of meat, offal and meat products obtained from horses, cattle, sheep, goats and pigs when tainted or originating from animals suffering from any disease making the meat unfit for human consumption; to prohibit the use of preservatives which may injure the export trade; to make such general provisions that are likely to benefit the export trade.

In pursuance hereof, the following provisions have been made :

All slaughter of horses, cattle, sheep, goats and pigs shall be carried out at slaughter-houses authorised as export slaughter-houses by the Ministry of Agriculture.

The whole of the work at an export slaughter-house must be supervised by the inspecting veterinary surgeon appointed by the Ministry or by a deputy recognised by the said Ministry. One of these two must be present during all the working hours, superintending the running of the entire slaughter-house, taking action should anything be contrary to the prescribed regulations, and personally carrying out or superintending the required stamping and marking, besides seeing that the slaughter-house at all times observes the regulations respecting the cleanliness of the premises and the health and cleanliness of the employees as prescribed.

The animals to be slaughtered must be inspected by the veterinary surgeon both before and after the slaughter while all the organs are still present and can be identified, and the examination must be carried out according to the regulations laid down by the Ministry of Agriculture. When classifying meat and offal, the veterinary surgeon must conform to the regulations laid down by the Ministry of Agriculture.

The approved meat and offal is classified as first- or second-class produce.

As first-class is considered all meat and offal which is absolutely sound and fit for human consumption even in raw condition and which has not become repulsive on account of abnormal smell or taint or from other reasons. At the export slaughter-houses pork and offal of pigs of the first class are referred to as first-class A or B; and first-class A are reckoned pigs of class I which do not suffer from rachitis or rickets in which or in the organs of which no trace of a tuberculous deposit has been found from which no part of the pleura or peritoneum has been removed.

The second-class produce consists of (a) meat and offal which should only be boiled or roasted, and (b) meat that may be eaten raw with impunity to health.

but which, owing to ill-nourishment, abnormal smell or less appetising appearance, is unfit for classification as first-class produce.

All meat and offal approved at an export slaughter-house shall be provided with stamps or labels established by Royal decree.

For pigs of class I A a red stamp (*Lur-brand*) shall be used containing the words "Danmark", the number of the slaughter-house and below that four "Lure", i.e., the old Danish horn.

The stamp used for meat and offal of class I of horses, cattle, sheep and goats as well as pigs of class I B, is a blue oval stamp containing the words "Danmarks I. Kl. Statskontrol" and the number of the slaughter-house.

For meat of class II, a rectangular black stamp containing the words "Danmarks II. Kl. Statskontrol" and the number of the slaughter-house is employed.

In case of export of offal to countries the regulations of which place obstacles in the way of complete investigation at the place of slaughter, a special label is used. The examination must be carried out to the extent permitted by the import regulations of the place of destination and the label may only be used when, after such an examination has taken place, the meat may in conformity with the Danish regulations be classified as first class.

Meat and offal which according to the regulations cannot be classified as first- or second-class produce must be destroyed, or made up for technical purposes in special rooms under the supervision of a veterinary surgeon. Meat which cannot be classified as first- or second-class, but which according to the regulations in force is considered fit for human consumption after sterilisation, may, however, be distributed directly from the slaughter-house to consumers in this country after having been sterilised in specially designed apparatus under the required supervision.

Export of meat and offal may take place only from slaughter-houses authorised as export slaughter-houses by the Ministry of Agriculture or from recognised factories at which the Ministry appoints an inspector whose duty it is to enforce the observance of the prescribed provisions.

Anybody is allowed, however, to export blood, intestines, tallow and fat (with the exception of raw unrendered pigs' fat to Great Britain and Ireland), as well as, for technical use only, pork-rinds, brains, bladders, pancreas, gall-bladders, ovaries, spleens and feet of cattle with the hoofs attached.

As regards the export of meat and offal of pigs to Great Britain and Ireland, a special rule is in force that only such meat and offal may be exported as is classified as first-class A produce. However, pork classified as first-class B, or first-class by a municipal inspection, may be exported as mess pork in casks filled with brine.

As regards all other export, the following rules are in force :

Meat when exported must be classed and marked as class I or be provided with the aforementioned special label for export to countries the import regulations of which prevent a complete examination at the place of slaughter. However, pork classified as class II produce at an export slaughter-house or as first-class by a municipal

specification may be exported in smoked or salted condition, provided the packing is marked " II. Klassen Kød " (*i.e.* meat of class II).

Offal may only be exported when it is marked at an export slaughter-house as class I.

Tinned meat, sausages and other kinds of prepared meat must, in order to be exported, be prepared at special factories approved by the Ministry of Agriculture. In these factories the Ministry appoints inspectors who have to remain on the premises during the whole of the working hours in order to see that the prescribed regulations are carried into effect. For the manufacture of tinned meat, both first- and second-class meat may be used, whereas only first-class meat and offal may be used for the manufacture of sausages and other kinds of prepared meat. The products must be marked in a special manner and can only be exported from businesses specially authorised for that purpose.

No other preservatives than salt, saltpetre and sugar and the products of wood smoke may be used for meat, offal, tinned meat, sausages and other kinds of prepared meat.

HOME MEAT INSPECTION.

It is prohibited to offer for sale or dispose of for human consumption meat and offal of dead (not slaughtered) horses, cattle, sheep, goats and pigs under any form whatever. Meat and offal of horses, cattle, sheep, goats and pigs that before slaughter are suffering from disease or after slaughter exhibit pronounced symptoms of disease must not be offered for sale for human consumption or disposed of in any form unless an authorised veterinary surgeon, according to rules drawn up by the Ministry of Agriculture, issues a certificate to the effect that the meat and offal is fit for human consumption.

These provisions are in force for the whole country, but each municipality may determine whether it requires further provisions regarding meat inspection to be introduced into its sanitary regulations.

The sanitary regulations have to be approved by the Ministry of Agriculture, and the provisions as regards meat inspection contained therein, which to begin with are very heterogeneous, are now only approved in accordance with the standard regulation drawn up at the instigation of the Ministry.

As in the case of export inspection, the municipal meat inspection applies to horses, cattle, sheep, goats and pigs.

In municipalities in which meat inspection is established, meat and offal of horses, cattle, sheep, goats and pigs may not be exposed for sale for human consumption or used in the manufacture of mince-meat, tinned meat, sausages and other kinds of prepared meat intended for sale before the inspecting veterinary surgeon appointed by the municipality has approved of it for human consumption and marked it according to its fitness for use. This does not, however, apply to meat and offal which in accordance with existing laws are exempted from re-inspection, as also foreign meat, smoked or salted abroad, which with the permission of the Board of Health may be exposed for sale on certain conditions.

The inspection established in the various municipalities differ according to whether slaughtering has to be carried out at a public abattoir or not ; and in municipalities without public abattoirs according to whether the animals to be slaughtered are to be examined before and after slaughter or merely after.

In municipalities with public slaughter-houses all slaughtering has to take place there. All the animals for slaughter are inspected by the authorised veterinary surgeon both before and after the slaughtering, and the working of the slaughter-house is under constant and close inspection. Meat and offal of animals slaughtered at public slaughter-houses may, after having been classified as class I at the slaughter-house, be introduced for sale for human consumption in any municipality in the country without re-inspection or further imposts. The same applies to meat classified as class II at the examination at the slaughter-house ; in this case, however, the municipality in which the meat is introduced has a right to demand re-inspection. The regulations are, however, based on the assumption that the inspecting veterinary surgeon and the regulations, according to which his inspection is carried out, have been approved by the Ministry of Agriculture, and that the inspection is subject to the supervision established by the Ministry of Agriculture. In addition, the products must be stamped in the manner specified in the sanitary regulations, showing the quality of the meat as well as the place of stamping and differing distinctly from that employed in the stamping of imported meat.

Of the municipalities in which municipal meat inspection is introduced according to sanitary regulations but which have no public slaughter-house, some have established provisions to the effect that all horses, cattle, sheep, goats and pigs slaughtered in the municipality shall be inspected by the veterinary surgeon both before and after slaughtering; whereas other municipalities merely demand veterinary inspection after the slaughtering.

Meat and offal of animals slaughtered in municipalities in which municipal meat inspection is established according to sanitary regulations but which have no public slaughter-houses can, after having been passed as class I, be introduced for sale for human consumption into any municipality in the country without re-inspection or further imposts. The following provisions must, however, be observed :

1. The animal must be inspected by the inspecting veterinary surgeon at the slaughter-house both before and after slaughtering ; the head (of pigs, calves, sheep, lambs and goats), heart, lungs, liver, kidneys, spleen and udder (except when containing diseased secretion), as also the uterus, provided it does not contain large foetuses must at the inspection be in natural connection with the body ; all the intestines, mesentery and tallow, as well as head, tongue and udder of large cattle and horses, must be present, and the lymphatic glands must not be removed from any animal ;

2. The stamping must take place in the manner specified in the sanitary regulations showing the quality of the products as well as the place of stamping and differing distinctly from the stamping used for imported meat or other meat stamped at the control-station ;

3. The inspecting veterinary surgeon, his remuneration and the regulations according to which he carries out the inspection must be approved by the Ministry of Agriculture, and the meat inspection must be under the supervision of the Chief Inspectors appointed by the Ministry of Agriculture.

In the municipalities where the veterinary surgeon lives at some distance, the meat inspection would be disproportionately dear if it were necessary for him to inspect the animals both before and after slaughtering ; therefore in such municipalities the sanitary regulations merely contain provisions for inspection *after* slaughter for

animals slaughtered within the municipality. At the examination, the animal should be presented with thorax opened. The head (of pigs, calves, sheep, lambs and goats), heart, lungs, liver, kidneys, spleen and udder (except when containing diseased secretions), as also the uterus, provided it does not contain large foetuses or any considerable quantity of secretion, must be in natural connection with the body; all the intestines, mesenteries, tallow, udder and uterus, as also the head and tongue of large cattle and horses, must be present and placed or marked in such a manner that it can be immediately ascertained to which animal they belong. The lymphatic glands must not be removed and no incision must have been made therein.

Meat of animals slaughtered in such municipalities where the animals need not be inspected before slaughtering cannot be introduced in other municipalities in which meat inspection is established.

In municipalities with meat inspection a control-station has been established where meat and offal which is introduced into the municipality and which is not provided with a stamp showing that it is permissible to offer it for sale in said municipalities may be examined. The above-mentioned requirements as to the presence of the organs in natural connection with the body apply also here. Meat stamped at such a control-station may only be offered for sale in the municipality where the stamping has taken place or in municipalities without meat inspection.

The regulations in force at the export slaughter-houses for the examination of animals to be slaughtered and the judging of meat and offal apply also to the municipal inspection, which is furthermore subject to the supervision prescribed by the Ministry of Agriculture.

The special regulations prescribed by the Ministry of Justice concerning cleanliness in public slaughter-houses, export slaughter-houses, sausage factories and the like, and also those concerning the sanitary condition of the employees, are in force in all slaughter-houses, sausage factories, shops and store-houses.

In municipalities with municipal meat inspection, all shops offering for sale of first-class meat or sausages or other kinds of prepared meat not exclusively made in the municipality should show notices to that effect.

It is left to the individual municipalities to decide whether their meat inspection includes trichina inspection or not. In municipalities in which trichina examination is prescribed the products subject to the regulations may only be offered for sale and consumption for human consumption, without being re-inspected, if provided with a duly authorised stamp or mark showing that the trichina examination has been carried out elsewhere. Experience shows that in Denmark only very few pigs are affected with trichina. In 1922, for instance, the trichina examinations proved that out of 265,000 pigs only one pig was found to be affected.

At the present moment municipal meat inspection is established in all Danish municipalities and in a number of rural districts. The total number of municipalities in which meat inspection has been established is about 300, and a number of municipalities have introduced the act of introducing this inspection. Public abattoirs, authorised as export slaughter-houses, are to be found in 36 of the municipalities. Of the municipalities without any public slaughter-house, about 150 have laid down provisions to the effect that all animals to be slaughtered are to be inspected both before and after slaughter. The total number of export slaughter-houses is 115, situated all over the country.

DIETARY REGULATIONS AND STANDARDS IN DANISH PUBLIC INSTITUTIONS

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In Denmark detailed dietary regulations exist in all large, and in a very great number of small, public institutions, such as hospitals, homes for the aged, poor-houses, prisons, etc.

This applies both to State and municipal institutions. In most cases the regulations have to be sanctioned by a public authority, and this authority consults the Public Health Department concerning the matter.

The principles followed by the public health authorities in drawing up or criticising dietary regulations may be said to be at present in a state of transition. This must be ascribed partly to the experiences gained during the difficult conditions with respect to food supply during the years of the world-war and partly to the progress made during the last ten years in the science of nutrition.

I.

In the middle of the last century, the central public health authorities (the College of Health) of the State began to take up the question of dietary regulations for public institutions. After the year 1860 the College of Health was consulted when complaints were made of the diet provided in a poorhouse — for instance, that it was insufficient to maintain the weight and support the well-being of the inmates — and in a few cases new dietary regulations for the poorhouses and hospitals of the provincial towns were laid before the health authorities for criticism. According to their instructions (1877), Medical Officers of Health had the supervision of the diets in the municipal prisons; and a Medical Officer of Health endeavoured to improve the dietary conditions in poor-houses.

In 1889, the Royal College of Health pointed out to the Government “the necessity of dietary regulations for hospitals, poor-law institutions, prisons, etc., instead of being composed in a more or less haphazard manner as heretofore, be now drawn up

on a more rational basis in accordance with modern scientific teachings regarding values". As a result of this application by the Royal College of Health, the Government issued a circular dated July 6th, 1889, demanding that dietary regulations in municipal hospitals and poorhouses contain "complete particulars about the composition of the diet provided with accurate statement as to the component parts of every dish together with weights of same". The requirements of this circular are still valid to-day.

The progress in the knowledge of food values alluded to by the Royal College of Health in their communication of 1889 was the scientific results of the Munich physiologist *Carl Voit* and his pupils. The dietary regulations of the succeeding period were based on the dietary standard for a labourer's daily ration adopted in 1876 by *Carl Voit*, viz., 118 grams protein, minimum 56 grams fat and maximum 500 grams carbohydrates. Some of these regulations were of importance; for instance, in 1888 the Royal College of Health drew up normal regulations for the diet in workhouses and, in 1899, a special commission composed dietary regulations for the municipal prisons throughout the country. A regulation drawn up in 1900 by two head physicians for the cheapest nursing class of two State mental hospitals contained more fat and protein than *Voit's* standard dietary.

In the calculation of the contents of protein, fat, and carbohydrates at this period some very practical tables were used which had been published in 1888 by the Danish physician *Chr. Jürgensen*. Dr. Jürgensen also assisted in the drawing-up of certain dietary regulations for workhouses.

In 1909, the central authority of the Public Health Department in Denmark was reorganised, and the National Board of Health was established (see Dr. G. Trygve's treatise). The National Board of Health is the central advisory authority in the sanitary supervision of all institutions where several people are kept together, and all new dietary regulations which are sent in for Ministerial approval from such institutions are submitted to the National Board of Health. According to the rules now in force a large number of institutions must have Ministerial approval of new regulations, but the rules for the approval of the regulations differ to a certain extent for the different institutions. For instance, the dietary regulations of the State mental hospitals are submitted to the National Board of Health, whilst institutions for the feeble-minded are private institutions under State control and their boards themselves fix the dietary regulations. Not only are the dietary regulations of the State institutions sent in for Ministerial approval and submitted to the National Board of Health but also those of the municipal hospital and poor-law institutions (homes for the aged, and poorhouses belonging to town and county communes. On the other hand, institutions for convicts do not send in their dietary regulations to the National Board of Health.

In small municipal institutions, as, for instance, poor-law institutions in rural communes, the dietary regulations are approved by the Lord-Lieutenant, who in turn submits them to the County Medical Officer. According to their instructions (1915), the Medical Officers of Health have the local supervision of the diet in public institutions and prisons.

According to the instructions of the National Board of Health, the hygienic expert the latter shall participate in the working and the criticism of dietary regulations, and this expert in practice does the main part of this work. As the Professor of Hygiene at the University of Copenhagen has always been the expert of the National Board of Health, the work in connection with the dietary regulations is done in the University Institute of Hygiene, the staff of which takes part in same. From 1911 to 1918, Professor *A. Erlandsen* was the adviser in hygiene of the National Board of Health and under his directions a long series of dietary regulations were worked out according to improved principles. At the beginning of this period the metric system was introduced into Denmark and a number of dietary regulations had to be submitted for renewed approval as the statement of weights had to be converted into the new system. It was found desirable to amend many of the regulations. As a rule, economy was effected by the amendment, and a uniform method of arranging the regulations was introduced. Amongst other things, the quantities of the ingredients employed were consistently stated as the gross weight on purchase, whilst the nutritive contents were calculated from the net weight (after deduction of waste from the gross weight). Greater variation in the diet was introduced by arranging a rotation of the dinner courses for 14 days or three weeks, whilst the former regulations as a rule only contained a rotation for one week. A trained teacher (lady) in housekeeping was appointed assistant at the University Hygienic Institute and she took part in the work. By the assistance of this expert the practical utility of the regulations was greatly improved. The most important result of this period was the working-out of new dietary regulations for the Danish prisons (1912). In these regulations the quantity of protein in the diet was somewhat reduced in proportion to the former diet (from 119 grams to 111 grams per day) and the quantity of fat increased (from 56 grams to 75 grams per day).

II.

During the first period of the activities of the National Board of Health there was lacking the most important basis for the drawing-up of Danish dietary regulations, a thorough knowledge of the diet of the Danish population. Different nations compound their diet in widely varying ways, and in every nation the diet of the different classes of the population varies. The differences appear in the amount of calories, protein, fat, and carbohydrates which the food contains. However, the differences are much more marked when we regard the various articles of food in the composition of the diet (bread, meat, etc.), the number of meals per day, and the composition of the individual meals. Dietary regulations must agree with the dietary

habits of the country, and, therefore, in every country the basis for such regulations must be knowledge of the national diet.

Comprehensive investigations concerning the diet of the Danish people were not published after 1913, with the exception of one single instance in 1910. Previously only a few statistical calculations existed, the bases of which were in part doubtful (*Th. Sørensen, P. Knudsen, M. Rubin*). From Sweden a number of investigations had been published (*E. O. Hultgren and E. Landergren, 1889 and 1891*). However, all the older Danish dietary regulations were, in the main, made up on the basis of the standards of German physiologists.

After 1913, the valuable results of several series of investigations concerning the diet of the Danish people were published. One of these works was published by *Dr. Heiberg and Miss M. V. Bjærum*, a teacher of domestic science. These works were based on investigations undertaken by the Statistical Department of the Danish State. This department, first in 1897, again in 1909 and in 1916, had induced a great number of Danish families from all classes of the community in town and country to keep an accurate and detailed account of their consumption and expenses for a whole year. The accounts were entered in special books which the Department had compiled. On the basis of the results of these investigations, which the Department published together with the information regarding the families concerned, *Heiberg and Bjærum* calculated the food consumption and the consumption of the individual articles of food by the various classes of people in the Danish nation. The results were published from 1910 till 1921.

During the same years (after 1914) the results of another series of investigations were published by *Dr. M. Hindhede*, leader of a bureau for examining the conditions of nourishment which the State had established. *Hindhede's* investigations were carried out in a number of individual families whose daily consumption of food was controlled and examined during comparatively short periods. These investigations also extended over various classes of the population in the towns and in the country.

The value of *Heiberg's and Bjærum's* investigations lies in the fact that they comprise many families through a whole year. The drawback is that the investigations are based on household accounts alone without local control. *Hindhede's* investigations are well controlled but have only been for short periods (for instance, four weeks) and comprise a lesser number of families.

The two series thus supplement each other and their results tally well together.

In Table 1 A a few of these Danish dietary standards are reproduced in the usual way (the daily amount per man-value of calories, protein, fat and carbohydrate). The table shows that the Danish diet is rather rich in fat, but otherwise the statements given in Table 1 A do not characterise the given diet types and offer very little guidance in the criticising and composition of Danish dietary regulations.

In order to take better advantage of the investigations under consideration, Table 1 B has been calculated. In this, all articles of food of every type of diet are divided into six groups (see Table 1 B) and the percentage of the calories of the diet from each of the six groups is calculated.

A corresponding calculation has often been carried out formerly — for instance, Heiberg and Bjørum and by American investigators — and the articles of food have been classified in more than the six groups employed here. But the results of this kind of calculation have not hitherto been made use of to the extent they deserve. The various types of diet are characterised much better by Table 1 B than Table 1 A. Table 1 B shows some of the differences between the diet of the Danish rural population and the Danish town population, but, in addition, the table shows considerable uniformity among the types of diet used by the various classes of population in Denmark.

Some of the figures taken from the work of Heiberg and Bjørum differ from the corresponding figures from Hindhede's works, and this is mostly due to the fact that Heiberg and Bjørum have calculated (especially in group 2: vegetables, potatoes and fruit) over their values without making allowances for waste (meat, bones, potato peelings, etc.), whilst the values taken from Hindhede's works are calculated after the deduction for such waste.

The types of diet of different countries, when calculated as in Table 1 B, show a great deviation which characterise the difference in the dietary habits of the different nations. By a closer analysis of the individual groups the diet types can be characterised still further (in Denmark, group 1 contains a large quantity of rye bread and group 2 a large quantity of potatoes but little fruit, etc.).

The method of calculation in Table 1 B has yet another advantage. As the table states the percentage of the total calorie contents of the diet for each individual group, the figures in Table 1 B are independent of the scale used in the calculation (man-values (units)) and the results attained by various investigators can be directly compared with each other.

The method of calculation and arrangement in Table 1 B is very useful in working with dietary regulations.

III.

The investigations on the dietary habits of the Danish population afford a sound basis for the dietary regulations now being worked out by the National Board of Health. War conditions, too, have had an influence on the composition of the later regulations. These conditions belong to the experiences gained during the years of the world-war. In 1917, the German submarines cut off Denmark from all supplies, and the country was therefore, to support the population and the large quantities of live-stock by its own products. The Government established a Food Control Council consisting of members, amongst whom were the physiologist Professor H. Møllgaard and M. Hindhede. Since 1904, Hindhede had advocated a more frugal mode of living

and had drawn attention to the fact that the amount of protein necessary in the diet had formerly been over-estimated whereas the value of the vegetable protein had been under-estimated. The Food Control Council calculated the amount of food necessary for human beings and animals in Denmark and proposed the rationing of a number of important articles of food. Other proposals were also made, all aiming at enabling Denmark to live on its own products. In the main, the Government followed the advice of the Council, and the rationing of food supplies was carried out with great consistency both for human beings and animals. The Government succeeded in procuring sufficient food supplies for the population of the country, by, amongst other measures, limiting the stock of pigs throughout the country and by very greatly reducing the production of alcoholic liquors. The composition of the diet of the people, however, had to be altered a good deal. More porridge, etc. and potatoes were eaten and less meat, bacon, and fat than formerly. Less white bread was consumed, but more rye bread (rye mixed with wheat bran). When the manufacture of margarine ceased, butter was rationed to the whole population of the country. The production and consumption of alcohol was very greatly reduced ; to babies was allotted plenty of whole milk.

These changes in the diet of the population were not detrimental to the health of the people. Apart from the fact that mortality from tuberculosis increased slightly during a part of this period, the state of health was particularly good and the death rate low during the rationing until the great influenza epidemic began. The causes of this good result were perhaps many : amongst other things, the reduced consumption of alcohol, social measures in favour of the poorer classes and the prosperity of the country during these years. At any rate the change in the diet caused no deterioration in the state of health. Possibly changes in the diet contributed to the improvement of the general state of health. Hindhede has endeavoured to show this on statistical lines.

This good experience gained during the years of rationing has influenced the composition of dietary regulations in public institutions, especially the regulations for institutions where the greatest economy is called for. In a recent proposal regarding dietary regulations for a smaller institute for the feeble-minded, the quantities of meat, bacon and fish were restricted to such an extent that only 5 per cent of the calories of the food came from this group of articles of food (group 4 in Table 1 B), whilst 52 per cent of the calories came from bread, flour and meal (group 1).

To an even greater extent than the rationing experiences, the knowledge about vitamins has influenced the dietary regulations, particularly Professor *C. E. Bloch's* observations in the " Rigshospital " in Copenhagen of Xerophthalmia in children who were nourished on a diet deficient in milk fats (published in Danish in 1917 and in English in 1921). *C. E. Bloch* had also observed that the appearance of Xerophthalmia in Denmark ceased in the years of the war during the rationing of articles of food, and he explained this as being the fortunate consequence of butter being rationed with the result that all the inhabitants of the country received milk fats.

Later (in 1920) cases of Xerophthalmia appeared also amongst adults in Danish asylums for mentally deficient. An examination of the dietary conditions showed that the diet was well varied and apparently resembled the diet in many other institutions. In spite of this the diet proved to be deficient in fat-soluble vitamin, mainly

use the patients mostly received machine-skimmed milk and because they got few green vegetables and no butter at all.

Machine-skimmed milk and vegetable margarine are much used in Denmark, and often very difficult for public institutions to secure green vegetables in larger quantities, especially when the institutions have dietary regulations which do not permit the dinner courses in summer being different from those in winter.

As a result of the experience regarding Xerophthalmia in public institutions, the National Board of Health is endeavouring to compose dietary regulations which make it possible to vary the composition of the diet according to the season of the year, and in the cheapest dietaries (for instance, in the small asylum for mentally deficient persons mentioned above) a certain amount of whole milk and milk courses are prescribed and a supply of green vegetables.

IV.

Table 2 is a typical example of modern dietary regulations for a Danish municipal home for the aged in a small town. The table shows the Danish dietary habits in public institutions. Four meals per day are given. At three of these meals bread and butter is provided (as a rule with margarine instead of butter) and at one of these "extras" (which mean a slice of cheese, sausage, cold meat, etc.). At only one meal, *viz.*, dinner, are warm courses given (two courses).

The regulations contain the weights of all ingredients used in a single portion of each meal; and also the weights for a single portion of the ingredients for each of the other dishes are stated. The weight stated means the weight purchased (without loss or waste). Dinners change in rotations of 14 days. In order to make it possible to render it possible to vary the diet according to the season of the year, "alternative dishes" are given (with accompanying list of ingredients) which may be used instead of the dinner dishes for individual days. It is stated that the patients may receive extra bread and margarine.

When regulations such as those in Table 2 are submitted for criticism by the National Board of Health, the first thing considered is the general nature of the composition of the diet, for instance, the division of the food at the individual meals, the composition of these meals, variation of the dinner dishes, list of ingredients for the individual meals, etc. Next is calculated per person the daily contents of calories, protein, fat and carbohydrates in the diet and the result compared with Danish dietary standards. Then the average daily consumption of every article of food is calculated. The food is divided into over six groups stated in Table 1 B and the percentage

of the calories from each of these groups is then calculated. For the regulation in Table 2, the result of this last calculation is stated in Table 3, together with the result for a Danish worker according to Table 1. A comparison shows a fair agreement, only the regulation of the home for the aged contains proportionally more milk and less meat than the worker's diet ; this, however, must be considered as being appropriate. In Table 3, for purposes of comparison, the dietary of an American home for the aged (Baltimore) is given, calculated in the same way. The difference is great, especially in group 4 (meat, bacon, fish) and group 5 (butter, margarine, fat). The American regulation corresponds to American dietary habits but not to the Danish. The difference would appear in a much stronger light were an analysis made of the articles of food in each of the six groups.

A further analysis of the six groups of articles of food serves to show the quantity of vitamin contents in the diet. B vitamin-containing articles of food are to be found especially in group 1, C vitamin-containing in group 2 and A vitamin-containing in group 3, partly in groups 2 and 5. It has not yet been possible to produce a systematic plan for judging the vitamin content of dietary regulations.

Finally, a calculation of the cost of the diet is undertaken.

V.

When the National Board of Health is requested to assist in composing new dietary regulations the mode of procedure is different from that adopted in the criticism of the present regulation. The hygienic adviser to the National Board of Health employs two different methods, according to the size of the institution.

A. Smaller institutions which have not previously had fixed dietary regulations are requested to answer the following questions :

1. How much is paid for full maintenance per day ?
2. How large a part of this sum may be used for food ?
(Provided no decision has been made as to this, it is suggested whether this part can be fixed at 26 per cent or at most 30 per cent of the aggregate cost of maintenance.)
3. What have the dietary expenses been per day during the last calendar years ?
4. Does the institution use products from its own garden ?
5. How many inmates are there on an average per day ? (How many of these are men, women, or children, and how old are the children ?)
6. Have the inmates hard manual labour ?
7. How many employees live in the institution ?
8. Do the employees receive the same diet as the inmates ?
9. Price per kilo of the goods stated in enclosed list to be stated.

10. List of dinner dishes provided during three months (possibly with list of ingredients).
11. Statement regarding the present arrangement of dry diet (meals other than dinner).
12. Which meals are partaken of daily and at which time of the day are they served ?

B. When larger institutions desire new dietary regulations a local investigation is made on the diet and dieting conditions. An assistant lady teacher of domestic science from the University Institute of Hygienic resides for at least a week in the institution in question and examines the diet, the quantities of food consumed, waste, sanitary conditions, serving, etc. These examinations have proved the necessity of regulating the employees' food from that served the inmates, as in some places great differences were found (for instance, in the asylums for mental deficientes where phthammi appeared amongst the patients but not amongst the employees).

In planning the regulations on the basis of these investigations consideration must be given, in the first place, to the former practice concerning the diet of the institution and to the amount of money which the institute is able to spend on the diet.

The draft regulation is arranged as in Table 2.

In very large institutions no definite rotation of the different daily dinner dishes is arranged, but it is left to the institution itself to determine the dinner courses for a certain time on the basis of a list of dinner dishes appended to the regulation. This list contains an inventory of all dishes which may be used in the institutions (the recent proposal of this kind this list contained 61 entrées and 66 other courses). For every dish is stated the nature and quantity of the ingredients to be used.

In most institutions for adults — without manual labour — *e.g.*, homes for the aged, hospitals, etc., a diet is given which contains about 3,000 calories per person per day; for working people an addition of 250 or 500 calories is given.

In larger institutions it has been proposed to give to women a diet with 10 per cent less calorie contents than that given the men. On the other hand, investigations have shown that, in mental hospitals, for instance, the tranquil patients, on an average, eat less than the violent ones.

In prisons at the present time a diet is given containing 3,200 calories. Prisoners who lose weight receive an addition. In a prison for younger persons who have to do hard work the calorie contents of the diet had to be increased to 3,400 calories; convicts who are employed on hard field labour receive 4,100 calories in their diet.

In most institutions, *e.g.*, homes for the aged, poorhouses, prisons, all the inmates receive the same diet. In some places, however, the employees' diet is somewhat different from that of the other inmates. Hospital dietary regulations always contain several different diets, most frequently three diets: full diet, restricted diet, and fever diet. Patients suffering from diseases which require dietary treatment have, of course, a special diet arranged by the physician, quite independent of the regulations. In the

State mental hospitals there are three classes of diet of varying quality, according to the payments made by the individual patients. This system is not in use in other institutions and will probably be abolished shortly in the mental hospitals, but with the retention of certain additions to the diet for the patients who contribute a higher amount of payment and with special classes of diet for those patients whose condition requires a dietary treatment.

When a dietary regulation is planned for a larger institution, the latter is required to make a trial of same and eventually to suggest alteration before the regulation is approved.

The motive for introducing dietary regulations in public institutions in Denmark originated presumably in the desire to exercise control over the diet provided by these institutions and see that it was sufficient and corresponded to the physiological requirements. The conditions have now quite changed. Regulations are introduced not only for the sake of control but, as a rule, the institutions themselves wish to have dietary regulations, as this simplifies the administration of dieting conditions. Institutions apply to the National Board of Health because they appreciate having expert assistance in the planning of these regulations. Moreover, it has proved to be an advantage for a public institution to have dietary regulations. When criticism is made of the diet in an institution, the critic can be asked to point out the defects in the regulations and suggest amendments.

Table I B.

PERCENTAGE OF CALORIES FROM DIFFERENT GROUPS OF NUTRIENTS IN THE DIETARIES OF TABLE I A.

	<i>Country</i>		<i>Town</i>			
	Farmer families		Peasant families		Labouring-class families	
	Heiberg and Bjørnum 142 families 1909	Hindhede 121 families 1912	Heiberg and Bjørnum 84 families 1909	Hindhede 10 families 1912	Heiberg and Bjørnum 76 families 1909	Hindhede 48 families 1911-1912
	%	%	%	%	%	%
1. Cereals.....	43.8	47.2	43.4	42.0	37	41.3
					%	%
					34	29.4
2. Vegetables, potatoes and fruits ...	10.7	5.7	11.5	5.9	9	7.0
					13	7.4
3. Milk, cheese, eggs .	11.8	11.5	11.3	12.8	8	8.0
					11	12.4
4. Meat, pork, fish ..	10.3	6.8 ¹	10.6	11.1	14	13.0
					12	11.6
5. Butter, margarine, fat	14.0	17.7	13.5	16.5	19	19.5
					17	24.8
6a. Sugar.....	8.7	10.3	9.5	11.0	11	10.9
					12	14.1
6b. Beer	0.7	0.9	0.9	0.8	2	0.4
					1	0.3

¹ One of the families was vegetarian.

Table II.

TYPICAL MODERN DIETARY REGULATIONS, ADAPTED FOR A PUBLIC HOME FOR
AGED PERSONS IN A SMALL DANISH TOWN.

DAILY MEALS

Every morning.

	Tea	2 g.
1/2 pint sweet milk	Sugar	20 g.
or a cup of tea	Coffee	7 g.
or a cup of coffee	Sugar	10 g.
	Milk	25 g.
1 1/2 slices rye bread		60 g.
1 slice white bread		25 g.
Butter or margarine		15 g.

Every noon.

Two courses :		
1 slice rye bread		40 g.

Every afternoon.

	Coffee	10 g.
1 cup of coffee	Sugar	20 g.
	Milk	50 g.
White bread		50 g.
Butter or margarine		10 g.

Every evening.

Milk or tea as morning.		
2 1/2 slices rye bread		100 g.
Butter or margarine or fat		25 g.
Sundries, meat, cheese, etc.		25 g.
Cheese		10 g.
White bread		25 g.

To inmates doing manual labour an addition of 50 g. bread and 10 g. margarine be given.

By the quantities of ingredients stated must be understood the gross weight in prepared condition, *e.g.*, raw meat with bone and sinew in it, potatoes, etc.

Table II (*suile*).

MENUS

(14 days' turnover)

First week.

Dishes.	Ingredients.		Substitutionary (th and remarks	
1. Fruit soup, $\frac{1}{2}$ litre. Boiled meat with potatoes and horse-radish sauce.	Fresh or dried fruit... 150 or	40 g	Meat 200 g Flour..... 10 g Horse-radish Currants Potatoes 200 g	Stewed rhubarb (see 1a).
	Sugar	40 g		
	Sago	15 g		
	Rusks	50 g		
2. Beef soup with rice and meat or flour balls. Apple cakes.	Broth	500 g	Flour..... 75 g Buttermilk..... 100 g Sugar 7 g Bicarbonate of Soda 1 g Margarine 30 g Sugar 10 g	Pancakes (see 2a).
	Mixed veg.	175 g		
	Rice.....	30 g		
	Meat or flour balls			
	Broth	40 g		
	Flour.....	7 g		
	Milk	30 g		
	Margarine	15 g		
	Flour.....	20 g		
	Water.....	50 g		
	Egg	1/4		
3. Barley porridge with milk. Fried fish, potatoes.	Barley	75 g	Fish..... 300 g Fat 20 g Potatoes 250 g Margarine 5 g Flour..... 7 g	Herrings, cod, mackerel may be used.
	Gran. sugar	10 g		
	Butter or margar..	5 g		
	Milk	200 g		
4. Buttermilk soup. Fried liver	Buttermilk	500 g	Liver..... 150 g Fat 20 g Flour..... 10 g Onions 40 g Potatoes 250 g	Porridge and milk (see 4a). Minced-meat past (see 4b).
	Wheat meal	35 g		
	Sugar	40 g		
	Raisins	15 g		
5. Sago soup, $\frac{1}{2}$ litre. Fish forcemeat (fried) balls.	Sago	25 g	Fish forcemeat... 150 g Fat 20 g Potatoes 250 g	Strawberries or raspberries Stewed cod (see 5b).
	Juice	50 g		
	Sugar	10 g		
	Prunes.....	25 g		
	Cinnamon, vinegar			
6. Rice pudding. Corned beef or pork with greens.	Rice.....	65 g	Pork or beef 175 g Vegetables 200 g Margarine 10 g Flour..... 10 g	
	Skimmed milk....	500 g		
	Ale	200 g		
	Sugar	25 g		
	Cinnamon.			

Table II (*suite*).

Dishes.	Ingredients.				Substitutionary dishes and remarks.
7 Cabbage soup. Fried rice-cakes.	Pork or cabbage soup	0.5 l.	Rice..... ca.	200 g	Green kail or cabbage may be used or peas given instead (see 7a).
	Cabbage	200 g	Egg	½ g	
	Potatoes	100 g	Flour.....	10 g	
			Sugar	15 g	
			Margarine	30 g	
Second week.					
8 Elderberry soup. Joint.	Fresh or dried elderberries, 125 or	25 g	Meat	200 g	Apple soup. (sweet). Boiled apple (jelly). or boiled fruit (jelly) (see 8a).
	Sago	15 g	Margarine	5 g	
	Sugar	40 g	Flour.....	7 g	
	Rusks	50 g	Potatoes	250 g	
	(or apples)	50 g			
Ground-rice porridge. Boiled fish.	Milk	500 g	Fish.....	300 g	Rice can be substituted by barley, maize or manna.
	Granulated rice ..	65 g	Potatoes	250 g	
	Juice	50 g	Margarine	5 g	
	Sugar	15 g	Flour.....	7 g	
			Mustard or parsley		
Milk and rusks. Fricassé.	Milk	500 g	Veal.....	175 g	Ragout (see 11 a).
	Rusks	50 g	Carrots	75 g	
	Sugar	15 g	Margarine	7 g	
	Cinnamon		Flour.....	10 g	
			Potatoes	225 g	
Fish soup with macaroni, ½ litre. Hash.	Fish soup.....	500 g	Margarine	10 g	Cabbage soup (see 7). Hash (see 10a). Blackpudding (see 10b).
	Macaroni	25 g	Flour.....	20 g	
	Vegetables	125 g	Onions	15 g	
	Margarine	15 g	Soup	65 g	
	Flour.....	25 g	Boiled potatoes ..	250 g	
Rice with apples. Bacon-and-egg cake.	Rice.....	75 g	Eggs	½ g	Pears or other fruit may also be used.
	Apples	100 g	Flour.....	20 g	
	Sugar	45 g	Milk	100 g	
	Whole milk.....	200 g	Bacon.....	50 g	
			Fat	20 g	
Sago soup (sweet) ½ l. Forcemeat with greens.	Milk	500 g	Meat	125 g	The meal mentioned in No. 9 may be used for this sweet soup. Pork sausage (see 13a).
	Sago	25 g	Flour.....	20 g	
	Sugar	15 g	Milk	90 g	
			Onions, salt, pepper		
			Vegetables	250 g	
			Margarine	15 g	
Bean soup. Fishballs with curry and rice.	Bread	125 g	Fish forcemeat...	150 g	Pickled herrings with potatoes and onion sauce.
	Ale	250 g	Margarine	7 g	
	Sugar	40 g	Flour.....	10 g	
	Whole milk.....	100 g	Rice.....	40 g	
			Curry		

Table II (suite).

SUBSTITUTIONARY DISHES.

1a. Boiled rhubarb.		2a. Pancakes.		4a. Porridge and milk.		4b. Forcemeat balls.	
Rhubarb	250 g	White flour.....	100 g	Milk	500 g	Meat	100
Sago	ca. 30 g	Buttermilk.....	200 g	Barbley	200 g	Flour.....	20
Sugar	60 g	Sugar	20 g			Milk	90
Whole milk....	100 g	Salt, natron, soda				Fat	25
		Margarine	40 g			Potatoes	250
						Margarine	7
						Flour.....	10
5b. Stewed cod.		7a. Yellow peas.		8a. Boiled fruit (jelly).		8b. Boiled apples (jelly).	
Dried cod	50 g	Peas.....	100 g	Raspberries.)	120-150 g	Apples	200
Potatoes	250 g	Mixed vegetables	100 g	Currants ...)		Potato meal.. ca.	30
Margarine	10 g	Soup	500 g	Sago flour.. ca.	30 g	Sugar	ca. 60
Flour.....	15 g	Potatoes	150 g	Sugar..... ca.	60 g	Whole milk....	100
Milk	200 g			Whole milk....	100 g		
10a. Hash.		10b. Black pudding.		11a. Ragout.		13a. Pork sausage.	
Meat	175 g	Blood sausage...	150 g	Meat	175 g	Sausage.....	150
Soup	200 g	Butter	10 g	Fat	10 g	Fat	15
Potato	250 g	Apples	100 g	Flour	10 g	Flour.....	5
Onion, salt, pepper.		Sugar	35 g	Potatoes	250 g	Skimmed milk..	100
						Potatoes	250
14a. Pickled herrings with onion sauce and potatoes.							
		Herring.....	1				
		Potatoes	250 g				
		Margarine	5 g				
		Flour.....	7 g				
		Milk	100 g				

Table III.

	Dietary regulations, Danish Public Home for Aged Persons	Labouring-class families in Danish towns (see Table I)		Dietary study in American Home for Aged Men (Baltimore) ¹
		according to Heiberg and Bjærum	according to Hindhede	
A.				
ries.....	2,687 cal.	2,730 cal.	2,807 cal.	2,339 cal.
tein.....	86 g.	85 g.	79 g.	83 g.
.....	88 g.	96 g.	109 g.	
bohydrates.....	371 g.	364 g.	358 g.	
B.				
	%	%	%	%
ereals.....	38.9	37	41.3	27.1
vegetables, fruits.....	7.0	9	7.0	11.6
milk, cheese, eggs.....	18.5	8	8.0	8.0
meat, pork, fish.....	7.3	14	13.0	27.9
butter, margarine, fat.....	17.7	19	19.5	12.2
Sugar.....	10.6	11	10.9	13.2
Beer.....		2	0.4	

Dietary study No. 687 in *Bulletin* 223 (1910), from U.S. Department of Agriculture, Office of Experimental Statistics (H. L. Knight, H. A. Pratt and C. F. Langworthy).

INSPECTION OF MILK

BY DR. CHRISTIANSEN,

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The public supervision of milk in Denmark is, as regards its organisation, mainly a purely municipal matter: it is the individual municipalities that decide as to whether the milk exposed for sale within their boundaries shall be under public supervision, also the eventual range of the said supervision. This optional power was granted to municipalities under the Act of January 12th, 1858, authorising them to arrange a number of matters relating to hygiene in general by means of a "Sundheds vedtægter" (Sanitary Regulations) established by the municipalities. The said Municipal Regulations are, however, subject to the approval of the Justitsministerium (Home Office) in order to be valid.

Naturally, it was the first-line towns that were interested in establishing inspection of milk, and all larger, as also a number of smaller, towns, besides some rural municipalities, have gradually introduced such an inspection. However, owing to the aforementioned optional power, the drawing-up of the various municipal by-laws and their requirements of same as regards milk often vary considerably in the different towns. This could not be avoided, although steps were taken to make the regulations as homogeneous as possible at the various places.

Though the inspection of milk thus is mainly a municipal affair in this country, there are, however, certain regulations, relating to the trade of milk, in force for the whole country, *i.e.*, in all municipalities, including those that have not established an inspection whatever. These regulations, however, are not very minute; they are almost exclusively concerned with the composition of the milk and aim essentially at fixing certain minimum regulations, more especially as regards fat percentage, volume of solids and the like, thereby preventing direct adulteration or sale of milk or cream of inferior quality under designations used for commodities of a better quality.

The regulations under review were made pursuant to the Act concerning the examination of victuals, etc. (Act of April 18th, 1910), which (in Section 7) authorises the Minister of Justice (Home Secretary), by a decree, to establish provisions as to what may be exposed for sale under the customary designations for victuals. Pursuant to this, a Ministerial Decree (January 10th, 1921) was issued as to what may be exposed for sale under the designation of milk, cream and the like. This decree contains the following provisions:

A. Cow's Milk and Cream.

I. Cow's milk must only be sold as:

- (1) *Whole milk.* Under this designation only such milk may be exposed for sale which contains at least 3 per cent of butter-fat, from which

no abstraction of any natural constituents has been made and into which no foreign substance of any description has been added.

(2) *Jersey-milk.* Under this designation only whole milk obtained from Jersey cows and containing at least 4.75 per cent of natural butter-fat may be exposed for sale.

(3) *Children's milk.* Under this designation only such milk (cap. subsection 1) obtained from cattle that has been tested with tuberculine and is under special veterinary inspection may be exposed for sale. Moreover, the milk must, in respect to production and sale, fulfil the special provisions as laid down either by the respective local sanitary regulations or the regulation approved by the Home Office in regard to the municipal district in question.

(4) *Skimmed, half-skimmed and hand-skimmed milk.* Under these designations only such milk may be exposed for sale from which part of the natural butter-fat has been abstracted. Foreign substances of any description must not be added.

(5) *Buttermilk.* Under this designation only the product from the churning of the cream (or milk) remaining in the churn after the butter has been removed from same may be exposed for sale. The buttermilk must contain at least 6.5 per cent of solids ; however, when sold in bottles, it must contain at least 8.5 per cent of solids, and the bottle must be corked and labelled " Bottled Buttermilk ". The sale of buttermilk containing less volume of solids than prescribed is not considered as an infringement of the regulation under review in case the lacking volume of solids does not exceed 5 per cent.

II. Cream must only be sold as :

(1) *Cream (coffee cream).* Under this designation only the fatty part of milk separated by skimming, containing 13-14 per cent or 18-19 per cent natural butter-fat may be exposed for sale. Foreign substances of any description must not be added.

(2) *Export cream.* Under this designation only sterilised, homogenised cream containing at least 9-10 per cent of butter-fat may be exposed for sale. Foreign substances of any description must not be added.

(3) *Cream for whipping.* Under this designation only cream containing 30-32 per cent of natural butter-fat may be exposed for sale. Foreign substances of any description must not be added.

Milk or cream designated as pasteurised shall be heated to at least 80° C. and must not react when tested with paraphenyldiamine.

When exposed for sale, pasteurised milk and cream must be designated as such.

It is permissible to submit whole milk, skimmed, half-skimmed or hand-skimmed milk to certain special forms of treatment such as sterilisation, homogenisation, condensation or the like on condition that the said milk,

when offered for sale, is duly and accordingly labelled. An addition of sugar is permitted, but any addition of foreign substances of any descriptive is prohibited.

B. Milk other than Cow's Milk.

Milk from other animals than cows shall be designated as such and not be exposed for sale.

C. Artificial Fat Emulsions

Artificial fat emulsions must, even if they contain milk, not be exposed for sale under designation in which the words "milk" and "cream" are used.

Should the sanitary regulations of a municipal district contain more rigorous provisions than those established in the present decree the provisions of the sanitary regulations will be considered as being in force.

These provisions are thus to be taken as minimum provisions applicable to the whole country, being generally incorporated in the various municipal sanitary regulations without any essential amendments; however, the said municipal districts may issue special requirements. This applies, *e.g.*, to the sanitary regulations of Copenhagen, which on several points contain requirements in excess of those mentioned in the ministerial decree; thus the minimum fat percentage for whole milk in the metropolis is 3.25, in contradistinction to the 3 per cent of the decree.

As will be seen, the ministerial decree contains almost no provisions as to the sanitary condition of milk. Only in respect to milk sold under the designation "children's milk" is it required that it shall be obtained from cattle tested with tuberculosis and under special veterinary inspection. In all other cases it is left to the initiative of the municipalities themselves to make demands and stipulations as to the sanitary conditions. Also with respect to children's milk it is to some extent left to the municipalities themselves to provide detailed regulations. The ministerial decree prescribes that the said milk shall be obtained from non-tuberculous animals and under special veterinary inspection, but details concerning this inspection, as also requirements concerning the production and treatment of the milk in general, are left to the municipalities themselves within which such milk is exposed for sale, to be subject to ministerial approval.

The requirements demanded by the sanitary regulations of the various municipal districts as to the sanitary condition of milk, *viz.*, production, further treatment and sale, vary, as already mentioned, considerably. In many municipal districts no special provisions concerning milk exist, and in several others, especially in the smaller towns and in rural districts, the requirements as to the milk in general are but inconsiderable. The best and most elaborate provisions have been made in the larger towns, where the need of such provisions is undoubtedly greater.

The inspection divides itself naturally into two groups: (1) inspection of the milk-producing stocks, and (2) inspection of the milk at the place of consumption (inspection of the trade of milk, its treatment and its sanitary and unadulterated condition).

1. Inspection of the Milk-producing Stocks.

Provisions regarding the inspection of the milk-producing stocks have been made by a number of municipal districts here in this country — primarily by the municipalities of the metropolis but also by some others, chiefly larger, urban municipalities;

se provisions may vary somewhat in the various municipal districts. In respect of the metropolis, the milk inspection of which presents the greatest interest, the selection of the stocks from which the metropolis is supplied with milk consists in: inspection of the sanitary conditions of stocks under review, their keeping (cleanliness) of feeding, as also the milking and carrying-out of same as well as the first treatment of the milk; the same inspection is exerted towards the stocks from which *cream* is supplied for sale in Copenhagen. The inspection exercised by veterinary surgeons, in the case of stocks supplying children's milk, place at least twice per month. In the other cases as a rule but once per month.

As to the inspection of the sanitary conditions of stocks, the sanitary regulations of the metropolis prohibit sale of milk obtained from cows suffering from the following diseases: clinically demonstrable tuberculosis, anthrax, black-leg, hydrophobia, mastitis, acute inflammation of the udder, pyæmia and septicæmia, inflammation of the uterus, poisoning, foot- and-mouth disease, pronounced cow-pox, severe diarrhœa and other diseases attended by fever. The same applies to animals treated internally or externally with medicines which, by passing into the milk, may affect it detrimentally.

Regarding the exercise of the sanitary inspection itself, special rules have been laid out and sanctioned by the Danish Veterinary Society, thus acting as an unofficial guide to those veterinary surgeons exercising such sanitary inspection of cattle supplying milk for human consumption. According to these rules, the whole of the milk shall, twice per year, be subjected to a thorough sanitary inspection consisting in examination of respiratory organs and palpable lymphatic glands. At the (monthly or bi-monthly) inspections, no thorough examination of said organs is made provided that no special conditions are present. *On the other hand, the udder in all cases subjected to a thorough investigation, each part of it being separately examined and milk from each teat being milked into the hand.* Should cases of the above-mentioned diseases occur in the period between two inspections, the owners of stocks supplying milk for human consumption are in duty bound immediately to remove the animals in question, hold back their milk and inform the inspecting veterinarian.

The cows supplying children's milk shall be tested with tuberculine at least once a year and must not react at this test; moreover, they are subjected to a clinical veterinary inspection at least twice per month. Regarding the *feeding* of these animals, the sanitary regulations of Copenhagen include provisions subject to which various kinds of feeding-stuffs (beet trimmings, beet tops, distillers' slops, buck-wheat, mustard, &c.) are prohibited. Of roots, only carrots and sugar-beets must be used, and of these a maximum of 30 kg. per cow per day. Frequent and abrupt changes in the composition of the food ought to be absolutely avoided. Milk from cows that have calved must not be used for children's milk within 14 days from the calving, nor milk from cows giving less than 3 kg. per day.

Further, the inspector has to see that the fodder employed is fresh and that everything as regards the cows themselves, as also the cowshed, is irreproachable, as well as to assure that milking is carried out carefully and that the milk in general is obtained with corresponding carefulness. Persons employed in milking must be supplied with washable overalls; further, towels must be provided and clean water should be available in the cowshed during the milking. The children's milk must, immediately after milking, be cooled to at least 8° C. or lower, and this cooling must take place in a specially designed and set apart for this purpose.

2. *Inspection on the Place of Consumption.*

This comprises, in the main, inspection of the treatment of milk (in dairies or milk-shops), inspection of the sanitary condition and unadulterable nature of milk intended for sale for human consumption and inspection of equipment and cleanliness of milk-shops, etc.

Just as the inspection at places of production varies greatly in the different municipalities, the inspection of the milk brought to and exposed for sale in a municipality varies somewhat in the different municipalities. Again in this case it is especially the larger urban municipalities that have established more detailed provisions.

The sanitary regulations of Copenhagen decree that all milk exposed for sale in Copenhagen, as also the shops in which the milk is kept, treated or offered for sale, be under the control of the City Board of Health, and the persons who sell or purvey milk for sale in the municipality of the metropolis have to register with the sanitary police.

Premises on which milk is treated, kept or sold are subjected to a number of various provisions concerning equipment and cleanliness. Should milk not be exposed for sale in air-tight, closed bottles, the only other commodities allowed for sale in the same shop are the following : bread, cakes, flour, butter, margarine, lard, eggs, soda-water, beer, fruit, juices in bottles, chocolate and sweets in closed receptacles. The place in question must not be used for sleeping purposes or be in direct communication with places used for sleeping purposes ; should they communicate directly with dwellings or apartments, the door between same must fit tightly and be kept closed.

The pouring-out or lapping-off of milk in streets is prohibited in Copenhagen. Milk is here either offered for sale in closed bottles or in vessels from which milk is tapped off in dairies or milk-shops. In provincial towns, however, milk is commonly sold from vehicles in the streets.

As to the general health of the persons employed in the milk trade, the Sanitary Regulations of Copenhagen make the following requirements :

Should any person employed at milking, treatment or sale of milk live in a dwelling attached to a dairy become ill of any illness pointing to acute infectious febrile diseases (including typhus, diphtheria, scarlet fever or any other violent acute throat diseases, meningitis, acute rachitis, erysipelas, cholera) or any other serious chronic disease (including tuberculosis of the lungs) a doctor must be called immediately, who, if he thinks fit, should at once report the sickness to the City Board of Health, who then demand the patient to be removed from the place in question.

No person suffering from any extended or infectious skin-disease or who has large unclean wounds or whose hands or face are bandaged, or persons in connection with sick people suffering from severe and acute infectious febrile diseases, or those who are known to be carriers of the characteristic bacteria of said diseases, may be employed in milking, treatment or sale of milk. Cleanliness as regards clothing, combined with personal cleanliness, must be observed by all employed in milk-shops or in selling milk.

The provisions laid down in the Sanitary Regulations as to the *milk itself* may vary somewhat in the different municipalities. They consist chiefly in the establishment of a minimum fat percentage for milk and cream, and they generally follow, as already

tioned, the above Ministerial Decree laying down the minimum provisions in force in the whole country. With respect to Copenhagen, children's milk must only be exposed for sale in closed bottles of transparent glass. Pasteurised milk (that must have been heated to 80° C. and, immediately after the pasteurising, cooled to at least 10° C.) may only be exposed for sale in receptacles or bottles on which the date of the pasteurising and the name of the shop shall be conspicuously inscribed. Buttermilk which in Copenhagen is exposed for sale for human consumption must contain at least 10 per cent of solids. Further, it is prohibited to expose for sale milk contaminated in any way. Milk showing a deposit after standing for two hours will be regarded as unfitly contaminated.

The power to enforce the provisions mentioned above rests with the respective municipal Boards of Health ; the inspection is carried out in almost all the municipalities within which such an inspection is established at all by a veterinary surgeon appointed by the municipality. He is as a rule aided by the police when taking samples of milk for examination and in the inspection of shops and dairies. In the smaller municipalities, the veterinary surgeon in question is not only in charge of the inspection of milk on the place of consumption but also of the inspection of the milk-producing herds. In the larger municipalities which are supplied from a large number of stocks, more distant and scattered, the inspection of the stocks is generally carried out by a veterinary surgeon. After each inspection he issues a certificate as to the condition of the stock, this certificate then being handed to the Board of Health in the municipality within which the milk is exposed for sale.

Finally, it must be mentioned that, in addition to the inspection enforced by the mentioned sanitary authorities, there are — especially in Copenhagen — private supply companies that have established private supervision of stocks supplying with milk; in some respects their demands exceed those laid down by the sanitary authorities. These said private companies have generally exercised a very considerable influence on the whole development of milk inspection in this country, at a moment when public supervision was absolutely wanting or deficient, were able to carry out an extremely comprehensive and detailed inspection as regards their purveyors. This especially applies to “København's Mælkeforsyning”, which — partly for philanthropical purposes — was founded in 1878 by Dr. J. J. Jørgensen, who at that period introduced a model sanitary supervision of the stocks supplying the company with milk, thereby, and by intensive cleanliness in the treatment of milk and its cooling, being able to supply Copenhagen with milk good and pure in every respect. This institution had great influence on the further development of supervision of milk in this country, in that it taught the public to make demands on the sanitary conditions of the milk and became the prototype for similar milk-supplying companies, not only here but in numerous large towns abroad. The principle which “København's Mælkeforsyning” was founded — procuring of milk from healthy cattle, milked and treated with exemplary cleanliness, with keeping qualities secured by cooling — is the principle that hitherto has been the leading one in this country, and upon this the inspection of milk has chiefly been based.

THE MANUFACTURE OF DRIED MILK IN DENMARK

BY N. KJÆRGARD JENSEN,

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Until recent years but little interest has been taken in dried milk in this country. This, most probably, is due to the fact that fairly good and cheap milk has always been easily obtainable so that there has not been any home market for such a product.

During the war, however, difficulties began to arise in supplying milk in sufficient quantities to the large towns, and enquiries from abroad came pouring in steadily for the supply of dried milk. This led to "De danske Mejeriforeningers Fællesorganisation" (The Dairy Associations of Denmark) taking the question of the production of dried milk under discussion.

As a result of these deliberations, the associations, in 1918, purchased from the Netherlands a machine of the type known as "Tromlesystem" (drum system) (Just-Hatmaker's method) for the purpose of experimenting in this country.

The plant was erected at the "Ullerslev Andelsmejeri" (Ullerslev Co-operative Dairy), and experiments were begun under the superintendence of the writer.

At the conclusion of the experiments, "de danske Mejeriforeningers Mælkeeksport" (The Milk Export Department of the Dairy Associations of Denmark) was started with the object of beginning an export of sterilised milk, according to the Jonas Nielsen method, and an export of dried milk. Later on condensed milk was included in the business.

The first dried-milk factory was erected at Stege and started work in November 1920. In this factory there are Just-Hatmaker machines made in this country at the "Silkeborg Maskinfabrik" (Silkeborg Machine Works).

The Stege factory, during the two months of 1920, evaporated skimmed milk exclusively, altogether about 40,000 kg.

In 1921 it dealt with	412,613 kg.	whole milk and	51,079 kg.	kg. skimmed milk
» 1922	»	401,137	»	12,228 »
» 1923	»	589,735	»	168,378 »

This year about 24,000 kg. whole milk are dealt with daily.

At "Andelsmejeri" (The Co-operative Dairy), Skovkilde, near Haarlev, there is a machine of the same kind as at Stege, and this dairy evaporates about 4,000 kg. milk daily, which is sold through the Milk Export Department.

Besides these two plants, there is one at Haderslev, which produces dried milk by spray process known as the Krause method, which method is controlled by the *Stofftrocknungsgesellschaft m. b. H. in Frankfurt-a-Main*". This establishment requires that the milk should be condensed before it is dried by the factory, and applied by a condensing factory in Horsens belonging to the Milk Export Department of the Dairy Associations of Denmark. The quantity of milk used daily for this purpose is about 18,000 kg. whole milk.

Finally, the Milk Export Department is just putting up a new plant at Nr. Sundby, likewise using the spray process (known as the Merrel-Soule system). The dried milk from this factory has been sold in advance to an English firm for a period of five years on the basis of the Danish milk quotations and is to comprise at least 700 tons of dried milk annually.

The milk for these factories is supplied by co-operative dairies in their neighbourhood and consists as far as possible exclusively of fresh milk milked in the morning. As soon as the milk is brought to the factories a sample is at once taken from each pail and submitted to the reductase test. The rates of payment prevailing for the moment are: first-class milk at the official quotation; second-class milk at 1 øre per kg. less; third-class milk at 2 øre per kg. less than the said quotation.

THE SUPERVISION OF THE SALE OF MILK IN COPENHAGEN.

BY ST. FRIIS,
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Copenhagen is provided with milk from about 3,100 farms, having an aggregate number of about 59,000 cows. Of these, 20 farms, with about 2,100 cows, supply milk for infants, and 10 farms, with about 1,000 cows, supply Jersey milk.

As far as can be judged, about 280,000 litres of milk, besides cream, butter and skimmed milk, are sent in to Copenhagen daily. Of this quantity of milk some 13,000 litres are sold as milk for infants and about 3,500 litres as Jersey milk.

The stock of cattle from which the milk comes is mainly in Sjælland and Zealand, and there are some in Lolland — Falster and Funen. In the districts of Randers, Horsens, Aarhus and Aalborg there are farms supplying milk which, after treatment at the local dairy, is imported into Copenhagen as cream for export.

The milk from about 3,100 farms reaches the receivers in Copenhagen either direct from the producers or through the local dairies (supplementary milk).

The supplementary milk is forwarded to the receivers in Copenhagen through the milk committees of the dairy organisations, or direct from the local dairies according to private agreement.

In the milk coming direct from the producers is also included the milk which the dairy managers in the vicinity of the city themselves bring into the city and sell from their own carts.

An alteration in the milk supply of the city for infants has taken place, as one of the producers of milk for infants has established a department for bottling the milk at the place of production and transporting it by motor lorry daily to the various retail places in Copenhagen.

One of the large suppliers of milk now keeps his own special cows for infants. In about half an hour after milking, the milk reaches the bottling department of the dairy.

The regulations which apply for the supplying and selling of milk in Copenhagen are contained in § 48-62 inclusive. Various amendments to these regulations will be made in the near future.

Milk.

§ 48. All milk sold in the city and also the shops in the city where milk which is intended for sale is kept, treated or sold are under the Health Committee and the special provisions which the Committee lays down must be strictly complied with. The designation "milk" in these regulations covers cream and buttermilk where the special provisions are applicable.

§ 49. No one can bring milk into Copenhagen for sale in the city, or sell milk in Copenhagen, without giving notice to the sanitary police. Removals of shops and establishment of branches in the city must also be notified in advance. All pure milk brought into Copenhagen must be from farms whose stock are under the control of a veterinary surgeon in accordance with the Health Committee's regulations.

§ 50. Owners of milk cows in Copenhagen are bound to advise the sanitary police immediately of cases of contagious diseases, including tuberculosis. In other respects they must strictly observe the regulations drawn up for the keeping of cows by the Copenhagen Health Committee and also the provisions of the present regulations.

§ 51. As whole milk, only such milk shall be sold which is not deprived of any of its natural elements, to which there have not been added any foreign substances. The content of fat in which is at least 3.25 %. The addition to whole milk of skimmed or half-skimmed milk excludes such milk from being sold as whole milk, if such milk, after such addition, should not contain less than 3.25 % of fat. As skimmed milk shall only be sold milk which is deprived of a greater or lesser amount of its natural amount of fat. No foreign substances whatever shall be added to milk.

The term "half-skimmed milk" is permitted when the amount of fat contained is at least 0.75 %.

Under the term "Jersey milk", only milk shall be sold which is drawn from Jersey cows and which contains at least 4.75 % natural milk fat. Cream shall only be sold as :

1. Cream (cream for coffee) : Under this designation only the fatty part of the milk shall be sold which has been separated from the latter by skimming and which contains 13 to 14 % or 18 to 19 % natural milk fat.

2. Export cream : Under this designation only sterilised and homogenised cream shall be sold which contains at least 9 to 10% of natural milk fat; no foreign substances shall be added to such cream.

3. Whipped cream : Under this designation only cream shall be sold which contains 30 to 32 % of natural milk fat.

§ 52. As milk for infants must only be sold milk which, in addition to complying with the demands in § 51, is immediately after milking cooled down to 8° Celsius or below, and the content of fat in which is at least 3.25 %. The milk must be kept in a cold place until it reaches the consumer. Further, the milk sold as milk for infants must come exclusively from cows which :

- (a) have been tested for at least a year with the tuberculine test with a negative result ; and
- (b) have been examined not more than fifteen days previously by the veterinary surgeons and found to comply with the demands with respect to health, tending and feeding, as prescribed by the Health Committee in the general rules.

Every dealer in milk for infants is bound on demand to inform the Health Committee of the place from which the milk for infants sold by him comes, and must,

whenever demanded by the sanitary police, show by the production of the veterinary certificate that the conditions required under (a) and (b) have been complied with.

If the Health Committee finds the veterinary certificate insufficient, the Committee can insist upon the dealer taking further measures so as to ensure that the conditions laid down by this paragraph with respect to milk for infants are satisfactorily complied with.

Forms for such certificates are obtained on application from the Copenhagen Police 3rd Department (Sanitary Police).

Milk for infants must only be sold in properly closed bottles of clear, slightly coloured glass. Re-bottling must not take place. The bottles must be sterilised, carefully cleaned before filling; the bottling date must be clearly indicated on the bottle.

§ 53. The sale of pasteurised milk is prohibited unless it is described as such.

If pure milk, half-skimmed milk, skimmed milk, cream or buttermilk is also described as pasteurised milk, it must, in addition to complying with the demands in § 52, have been heated to at least 85° C. and thereafter have been immediately cooled to 8° C. or below, and it must not give colour reaction on the paraphenyldiamin test.

Pure milk, skimmed milk or cream may be subjected to other special treatment — for instance, sterilisation, homogenisation, evaporation or the like — provided such treatment is clearly notified at its sale. With the exception of sugar, the addition of any kind of colouring substance or preserving means is prohibited. If the pasteurisation does not take place in bottles, the cooling must take place in a cooling apparatus, and if the milk is not thereby cooled down to 8° C. or below, it must immediately be cooled on ice.

Pasteurised milk must only be sold in containers or bottles on which the pasteurising date and the name of the pasteurising firm is clearly indicated. If the sale takes place in bottles, these must be of clear, slightly coloured glass with airtight stoppers. Such milk must not be decanted.

All containers and bottles must be carefully cleansed and sterilised before pasteurising.

§ 54. Under the description "mixed milk for infants" — regarding which, as far as the milk used for mixing is concerned, the regulations indicated above under milk for infants (§ 52) apply — the milk can be sold in bottles, mixed with boiled water, and with the addition of sugar, provided the exact indication of the constituent parts of the mixture is stated on the label of the bottle.

The bottling date must be clearly indicated on the label.

The mixture must always be sterilised in the bottle itself.

§ 55. Buttermilk, curds, etc., shall be described as such on sale. This also applies to milk from animals other than cows.

Under the designation buttermilk, only such milk shall be sold which is the product from the churning of cream (or milk) which remains in the churn when the butter has been removed from the latter.

Buttermilk shall contain at least 6.5% milk solids, but when offered for sale in bottles the buttermilk shall contain at least 8.5% of milk solids, besides which the bottles shall be closed and be labelled as bottled buttermilk.

The offering for sale of buttermilk which contains a lesser amount of milk solids as provided shall, however, not be regarded as a transgression of the present regulation if the deficiency does not amount to more than 5 % of the milk solids stipulated.

§ 56. All milk must be strained through a fine sieve immediately after milking is taken place, and it must in other respects be handled with care and cleanliness. The responsibility for this devolves upon the milk producer or upon the supplier or dealer. All objects and utensils with which the milk comes into contact must be kept thoroughly clean.

§ 57. It is prohibited to sell milk (buttermilk) and cream whose colour, smell, taste or appearance is remarkable ; milk from cows which have recently calved, and milk not serviceable for boiling ; from cows suffering from clinically demonstrated tuberculosis, anthrax, black leg, hydrophobia, yellows, inflammation of the udder, leucæmia and septimæmia, inflammation of uterus, poisoning, foot-and-mouth disease, venereal disease in advanced stage, bad attack of diarrhœa or ailments attended with fever, and also from cows treated internally or externally with medicaments which affect the milk. Milk containing dirt or other impurities may not be sold.

Milk which, after standing two hours, shows a visible precipitation is regarded as impure.

In order to ensure the observance of their rules, the Health Committee may at any time ask where milk sold in Copenhagen comes from, and can demand that the dealer in question sends in twice monthly to the Committee a veterinary certificate on the state of health, the tending, and fodder of the stock of cattle in question, drawn up in accordance with the general rules of the Health Committee.

§ 58. In the shops where milk is sold, every milk container from which milk of the kinds named in § 51 is measured out must be provided with the exact designation of the kind of milk it contains. The designation must be clear and in letters of 25 to 30 millimetres long and the containers must be placed so that the description is visible to the public.

If milk is sold in bottles these must be of clear, only slightly coloured glass. The designation of the contents and the name of the firm must be correct, conspicuous and placed on the side of the bottle or on the stopper. The quality of the milk contained must be clearly indicated on the side of the bottle or on the stopper.

The following regulations apply with regard to milk to be sold in the city :

Other designations of milk than those named in these rules are not allowed on containers and bottles or advertisement notices, unless the Health Committee in each case sanctions it.

Regulations regarding the construction of milk containers, treatment and transport are included in the special regulations drawn up by the Health Committee.

From one year after the present regulations have come into force no, re-bottling or bottling of milk in the street or other open place may take place.

§ 59. Premises in the city in which milk for sale is kept, treated or sold must be kept clean and carefully cleaned daily.

If the floor consists of boards and is not covered with linoleum or other waterproof material, it must be kept varnished, and the openings between the boards filled with

putty. The floor must be cleaned daily with a wet cloth. Once a week the floors doors and panels must be carefully cleaned, and the windows weekly.

Where walls and ceilings are not of marble or other stone, glass, etc., or are painted in oil-colour paint, they must be white-washed or lime-coloured at least twice a year. Walls and ceilings which can be washed must be cleaned at least four times a year.

Dry sweeping must not take place in the premises.

In all places where milk intended for sale in the city is kept, treated, or sold, there must be water spittoons of a serviceable type. The following goods only may be sold together with milk : bread, pastry, flour, meal, butter, margarine, fat, eggs, soda-water and ale in bottles, chocolate and fruit juice in bottles, and also sugar goods from closed containers. In mixed retailed shops where, on May 1st, 1904, milk and cream were sold together with other goods than those above named, the Health Committee can, for the duration of the life of the proprietor and possibly his widow, allow the business to be conducted in the same way, but only provided that the business is conducted at the same place for which permission was given (or in the immediate vicinity thereof) and with the exclusion of any articles which, in the opinion of the Health Commission, should under no circumstances be sold together with milk. Mangling, laundry work, washing, etc. must not be carried on in the same room from which milk is sold or in rooms from which there is immediate access to the shop.

The room must not be used as a dwelling- or sleeping-room, nor must it connect with rooms which are used for sleeping in, or with other rooms used as dwelling-rooms unless between these and the milk-shop there is a tightly shutting door which must not be kept open. Cellars without proper drains must not be used for the storage, treatment or sale of milk.

The provisions of this section do not apply to premises where milk is sold or kept bottled exclusively in hermetically sealed containers and where no bottling or decanting takes place.

§ 60. When a person employed in milking, sale and handling of milk, or living in rooms opening into a milkshop, develops symptoms of an acute, infectious febrile disease (including typhus, scarlet fever, diphtheria or other severe acute affection of the throat, cerebrospinal meningitis, acute poliomyelitis, erysipelas, choleraic diarrhoea, or of severe chronic infectious disease (including tuberculosis of the lungs), a physician must at once be called, who, if he considers it necessary, gives notice, as soon as possible, of the case to the Health Committee, which may order the removal of the patient from the premises.

No person suffering from extensive or contagious skin diseases, or having large unclean sores or dressings on hands or face, no persons having intercourse with persons suffering from a serious acute infectious febrile disease, or being known as carriers of the contagious matter characteristic of such diseases, must be employed in milking, the handling or sale of milk. Cleanliness in dress and person is required of persons employed in milk-shops or in the sale of milk.

§ 61. In addition to the person in question, the proprietor of the shop and also the supplier or producer of the milk in question is liable for the contravention of the

visions relating to personal conditions if the contraventions are chargeable to them. so far as the milk is not sold in closed containers provided with a supplier's seal or y, the dealer is responsible for the milk sold by him answering the description under which it is sold.

§ 62. A reprint of the provisions of Sections 48 to 62 of the sanitary regulations shall be posted up in a conspicuous place in every milk-shop.

Copies of the reprint may be had free of charge in the 3rd Department of the Copenhagen Police (Sanitary Police).

The control of these regulations is divided as follows :

1. The control at the place of production.
2. The control of the milk offered for sale.

The control at the place of production includes the monthly inspection of the stock supplying whole milk to Copenhagen mentioned in § 49-II of the sanitary regulations, fortnightly inspection of the stock supplying milk for infants to Copenhagen mentioned in § 52 of the sanitary provisions, and the inspection of dairies and premises where dairy managers bringing whole milk into the market in Copenhagen.

For livestock on farms supplying ordinary whole milk a veterinary surgeon's certificate must be sent in after the monthly inspection before the seventh day of the following month, and for the farms supplying children's milk the veterinary surgeon's certification takes place twice monthly and the certificates must be sent in once monthly. The giving and sending in of these certificates has naturally involved difficulties, as the veterinary surgeon's certificates, duly furnished with the owner's signature, have to pass through the Copenhagen receiver before being sent in to the Health Committee ; the filling up of the certificate has also given rise to many negotiations.

By a notice of June 21st, 1921, from the Health Committee, the provisions of § 49-II of the sanitary regulations now apply also to milk used in the production of cream of the highest quality, export and other cream, and skim milk when used in the production of cream for export.

The inspection of livestock is carried out by 130 veterinary surgeons. Six of these are in the employ of the milk-dealers whose suppliers they control, and have no direct practice with the owners whose stock they supervise ; the rest are practising veterinary surgeons.

The expenses of this control are, apart from some dairies exclusively supplying export cream to Copenhagen, defrayed by the Copenhagen receiver of the milk, which facility means that the consumer pays this part of the control.

The Health Committee, in July 1922, confirmed the rules drawn up by the Danish Veterinary Surgeon's Association for the veterinary control of stock from which milk is supplied for human consumption.

These rules read as follows :

1. *The State of Health of the Livestock.* — Previous to the examination the owner or his deputy must state whether any of the animals are ill and give information about the particular case. It is left to the discretion of the veterinary surgeon whether these animals are examined at once or later.

Cows not in milk, young cattle, and especially dry cows, must be examined, but if nothing of interest is found no closer examination takes place.

Cows in milk. — It follows as a matter of course that the veterinary surgeon carefully washes his hands if, in the course of the examination of sick animals, he has come into contact with secretions from udders, uterus, etc., or if his hands have otherwise been infected. On the first examination of the cattle and of additional cows, each individual animal is subjected to a close examination, especially of the respiratory organs, the udder, the lymphatic glands, and the throat, shoulder and knee-plait glands. Each section of the udder is examined separately and milk from each teat tested.

On subsequent visits it is not necessary to examine the respiratory organs and the throat, shoulder and knee-plait glands more than twice a year (before the cattle are taken out and after having been taken in), if special observations do not necessitate renewed examinations. The udder must, however, be examined on each occasion in the manner above described.

With regard to stock supplying children's milk, where, as stated, all the cows have passed the tuberculin test, examination of the respiratory organs and throat, shoulder and knee-plait glands is not required unless required by special circumstances. Cows not in milk and other animals fed otherwise than allowed for cows supplying children's milk must be kept together at one place in the stable.

The veterinary surgeon makes a statement of the result of the examination on the forms prepared for this purpose and takes notes for his own use and guidance on the next visit. All cases of sickness mentioned above in paragraph 57 must be examined specially.

After the examination, the owner or his deputy are instructed in the treatment for each case of sickness, such as isolation and the use of the milk, etc.

2. *The Care of the Stock.* — The veterinary surgeon must see to the state of cleanliness, that dirt, cow-dung, etc. is not found on the skin of the cows, and particularly not on the belly or udder, that the litter is sufficient and good and does not consist of musty or mouldy straw or similar straw for litter. Clearing away of the dung must not take place during the milking.

3. *The Fodder for the Livestock.* — The fodder in the stall and the adjoining fodder-rooms must be fresh. As far as livestock supplying milk for infants are concerned, the particular directions regarding the nature of the fodder given for the supply of milk for infants must be complied with.

4. *The Milking and Treatment of the Milk.* — The persons performing the milking must always wear a washable milking-dress, and towels as well as ample clean water must always be at hand.

During the milking the stall must be well lighted, particularly behind the cows.

The cans used for milking and for the keeping and transport of the milk must be carefully cleaned.

Immediately after milking, the milk must be strained through a clean fine metal strainer, frequently cleansed. In the case of milk for infants, the milk must then be

led to 8° C. or below this temperature. The milk for infants must be cooled and
t in a light clean room, not utilised for other purposes, and washed beforehand
h clean water.

The veterinary surgeon should try occasionally to arrange his inspection during
king hours.

In the event of faults or non-observance of the existing conditions being ascer-
ned through the veterinary surgeon's examination, the veterinary surgeon must —
er bringing the case to the knowledge of the owner or his deputy — indicate the
ects ascertained in the certificate under "Comments", which must always be
ompanied by information as to whether the owner has promised to remedy the
ects, provided this is the case. The next certificate must indicate whether the defects
exist or whether they have been remedied.

In cases where the veterinary surgeon is in doubt as to certain conditions, the
lth Committee or the Committee's veterinary surgeon should be informed.

The certificate of health must not be made out in pencil, and the veterinary surgeon
ld affix his name on the top left corner of the first sheet of the certificate.

The following is the wording of the certificates issued by the veterinary surgeons :

CERTIFICATE

ording the Cattle from which " Milk for Infants " is supplied for Sale in Copenhagen

I, the undersigned veterinary surgeon, engaged by Mr.....
upervise the sanitary conditions, care and feeding of the stock belonging to him
stabled at per
resent consisting of milk-cows (milkers), hereby declare that on
..... 19.., in compliance with the rules overleaf, made the fortnightly
ection of the cattle and, in compliance with the said rules, gave the owner the neces-
directions and orders for the sound condition of the milk. To the best of my
wledge no conditions exist which may be presumed to be in any way at variance
the strict compliance with these rules.

On my inspection the following milkers were :

nd to be suffering from :

Udder tuberculosis.....
Tuberculosis
Other diseases.....

Suspected of :

Udder tuberculosis
Tuberculosis
Other diseases

(Signature of the Veterinary Surgeon.).....

Remarks :

The undersigned owner of the stock mentioned in the above Veterinary Certificate
ertakes to observe strictly the rules overleaf, as well as the directions and orders
n by the veterinary surgeon in conformity thereof.

(Signature of the Owner.).....

(Reverse of Certificate.)

RULES

*to be observed by Owners of Stocks of Cattle from which Milk for Infants is supplied
Copenhagen.*

Every owner of cattle indicating that milk for infants is supplied from his stock shall observe the rules contained in the Sanitary Regulations for Copenhagen, in so far as they are applicable to the production of milk for infants, and likewise shall assume the following obligations :

1. The stock shall be subjected to the tuberculin test at least once a year. All animals which have passed the test shall be provided with an ear-mark by the veterinary surgeon.

Additions to the stock must not be admitted nor must their milk be used for milk for infants before they have passed the tuberculin test, which shall be made as soon as possible.

Cattle which have not passed the tuberculin test shall be kept strictly isolated from the rest of the stock and the owner is bound to get rid of them gradually.

2. A veterinary surgeon shall inspect the whole stock at least every fortnight and after each inspection issue the certificate printed overleaf.

The owner shall give the inspecting veterinary surgeon all information desired regarding the stock, feeding and milk, and shall comply with the directions given him by the veterinary surgeon.

3. Any cattle which the veterinary surgeon indicates as tuberculous shall immediately be removed from the rest of the stock and as soon as possible be disposed of or killed. Cattle which, for other reasons, are not passed by the veterinary surgeon, and particularly cattle suffering from any of the diseases mentioned in Section 57 of the Sanitary Regulations, shall be ordered by the veterinary surgeon to be removed from the stable or, if deemed sufficient, be placed at one end of it ; the milk must not be used and the cattle must not be replaced in the stock until the veterinary surgeon has given permission.

In the event of cases of sickness occurring between two visits of the veterinary surgeon, the owner shall isolate the animal or animals in question and retain their milk, informing the veterinary surgeon. If there is reason to assume that the cases indicate infectious diseases or poisoning the veterinary surgeon must be informed at once.

4. All fodder must be perfectly fresh and sound. Fodder which is mouldy or in other way defective must not be kept in the stable or in its immediate neighbourhood.

In summer the cattle must as far as possible be fed in the field. If stall-feeding takes place, the stable and the cattle must be kept as clean as possible and a special endorsement to this effect must be made on the certificate by the veterinary surgeon.

The controlling veterinary surgeon must be informed of the composition of the fodder.

The following rules apply :

(a) Of the turnip type of fodder only carrots and beetroots must be used and not in greater quantities than a maximum of 30 kg. per cow daily. Of molasses fodder up to 1 kg. per cow daily may be used.

Turnip-leaves, turnip waste, cabbage-leaves, dregs, mash, cotton-seed cakes, or dried buckwheat or mustard must not be used.

Rape-cakes must not contain any considerable quantity of mustard oil.

Frequent and abrupt changes of fodder are to be avoided. Before the cattle stabled in the summer or autumn they must be sheared on udder, thighs and tail.

Milk from cows which have calved within a period of ten days and milk from cows milking less than 3 kg. of milk daily must not be used.

Handling of the Milk. — Persons who milk must always wear a washable milking and be provided with a towel.

There must be an ample supply of clean water.

During the milking the stable must be well lighted, particularly behind the cattle.

Immediately after the milking the milk must be strained through a clean fine-meshed metal strainer which shall be frequently cleaned and the milk then be cooled

to 10 Centigrade or below. The cooling must take place in a light, clean room not used for other purpose, and rinsed with clean water before the cooling takes place.

CERTIFICATE

Regarding Stocks of Cattle from which Whole Milk is supplied to Copenhagen.

I, the undersigned veterinary surgeon, engaged by Mr.....
to examine the stock of cattle belonging to him and stabled at
..... at present consisting of
cattle, hereby declare that on the 192., I have made a close inspection
of the sanitary conditions, tending and feeding of the stock in compliance with the rules
laid down on the back of this certificate and have, in compliance with the rules, given the
necessary directions and orders for the sound condition of the milk. To the best of
my knowledge there are no conditions which are in any way at variance with the
requirements of compliance with these rules. On my inspection the following milkers were :

And suffering from :

Udder tuberculosis.....
Tuberculosis
Other diseases.....

Suspected of :

Udder tuberculosis.....
Tuberculosis.
Other diseases

Remarks.

(Signature of the Veterinary Surgeon.)

The undersigned owner of the stock of cattle mentioned in the above veterinary
certificate undertakes to observe strictly the rules overleaf and the directions and orders
given by the veterinary surgeon.

(Signature of the Owner.)

RULES

to be observed by Owners of Livestock from which Whole Milk is supplied to Copenhagen

Every owner of cattle from whose stock whole milk is brought into Copenhagen must observe the rules contained in the Sanitary Regulations for Copenhagen in so far as they are applicable to the production of milk and shall assume the following obligations :

1. To have the whole stock examined once a month by a veterinary surgeon. After each examination the certificate printed overleaf is issued and sent to the buyer of the milk destined for Copenhagen, who passes it on to the Copenhagen Health Committee.

The owner must give the inspecting veterinary surgeon all information on the stock, feeding and milk, and comply with the directions given him by the veterinary surgeon.

2. Cattle which the veterinary surgeon indicates as tuberculous, must be immediately removed from the rest of the stock and as soon as possible be disposed of or killed. Cattle which, for other reasons, are refused by the veterinary surgeon, particularly cattle suffering from any of the other diseases mentioned in § 57 of the Sanitary Regulations for Copenhagen, must, in conformity with the directions of the veterinary surgeon, be either removed from the stable or, if deemed sufficient, be placed at the end of it ; the milk must not be used, and the cattle must not be replaced in the stable until the veterinary surgeon has given permission.

In the event of sickness occurring between two visits of the veterinary surgeon the owner must immediately isolate the animal or animals and retain their milk, informing the veterinary thereof. If there is reason to presume that the cases indicate infectious diseases or poisoning, the veterinary shall immediately be informed.

3. All fodder must be in a perfectly sound condition. Mouldy or otherwise damaged fodder must not be kept in the stable or in its immediate neighbourhood.

4. Persons who do the milking must wear a washable milking suit and be provided with a towel. There must be an ample supply of clean water. During the milking the stable must be well lighted, especially behind the cows. Immediately after milking has taken place the milk must be strained through a clean, fine-meshed strainer and in all respects be handled with care and cleanliness. All utensils coming in contact with the milk must be kept properly clean.

* * *

On the basis of the certificates sent in by the controlling veterinary surgeon during the period from January 1st, 1921, to January 1st, 1922 it has been calculated that, in 1921, 6,279 and, in 1922, 8,416 sick cows have permanently or for a short long period been withdrawn from the supplies to Copenhagen.

The owners have generally displayed a clear understanding of the necessity of withholding the milk of sick cows.

Since April 1st, 1921, an additional link has been established in the control of the place of production, as an assistant veterinary surgeon, under the Chief Veterinary

geon of the Health Committee, has been appointed to participate in all the work of milk control. His principal work is to visit the producers, to control the execution, on behalf of the Health Committee, of the fixed conditions and special orders given by the controlling veterinary surgeon for the particular cases, and also to give general advice and directions.

The control of the milk offered for sale comprises two subdivisions :

1. Inspection of dairy plants, milkshops and cow-keepers' premises in Copenhagen.
2. Laboratory tests of milk samples bought by the sanitary police or handed over to the sanitary police by private parties.

A total number of 4,069 inspections of dairies and milkshops and 654 inspections of cow-stables have been effected at irregular intervals, partly by the veterinary surgeons of the Health Committee and partly by the staff of the sanitary police.

In 1922, the total number of cow-stables in Copenhagen was 132 with 101 cows, in the old part of the city, 7 cow-stables with 37 cows, and the districts included 10 cow-stables with 64 cows.

During the year the staff of the sanitary police have, at various railway stations, taken the temperature of the milk destined for the city.

Sampling of Milk.

In 1922, milk was sold from about 1,600 milkshops (including the retail vans of dairies), and during the year 11,290 samples of milk and cream have been bought and examined by the sanitary police.

In the course of the year, the following samples have been sent to the laboratory for examination as to quality : 298 samples of "milk for infants", 190 samples of sterilised milk, and 8,568 samples of whole milk ; of the latter, 37 were stable-samples, 1 was handed in to the police by a private party ; further, 22 samples of half-cream milk and 749 samples of skim milk, 438 samples of buttermilk, 1 sample of condensed milk, 409 samples of cream (13 per cent), 329 samples of best quality cream (20 per cent) and 251 samples of export cream, 1 sample of ice-milk and 2 samples of sterilised cream.

In all cases where dirt has been observed in the milk, and in several cases where bacteria found have given cause for an inspection of the livestock, special veterinary examinations have been ordered.

The bacteriological investigations to which the milk control has given rise have principally been germ-counting, which has, for instance, been undertaken in connection with investigations based on the fermentation—reduction test and the catalysis test. Examinations as to the degree of acidity (number of cubic centimetres 1/10 Na OH, which neutralise 100 cubic centimetres of milk) have been carried out.

Preservatives have during the last few years rarely been traced in milk. None was found in 1922.

THE SICK-BENEFIT CLUB SYSTEM OF DENMARK

BY DR. JOHAN KUHN.

It is a well-known fact that Denmark is one of the few countries of the world with a *system of voluntary insurance* against sickness to which all persons belonging to the poorer classes are admitted without regard to occupation. In most other countries insurance against sickness is compulsory for the working classes and, in some cases also for certain classes of Government and municipal functionaries, while voluntary insurance is, at best, open to other persons than the above and against a considerably higher premium.

Moreover, Denmark is the country in which the entirely voluntary system has been the most pronounced success; in fact, it may almost be said to be the only country in the world which has succeeded in establishing a really comprehensive system of insurance among the classes which such a system is chiefly intended to benefit, without any kind of compulsion whatever.

What, then, it may be asked, is the secret of the success of the Danish system?

The fundamental reason is to be found in the fact that *the established insurance organisation rests on a system of sick-benefit clubs which is the natural growth of years and has its roots in old-established traditions and in the Danish national character.*

A. — HISTORICAL SURVEY.

The first origins of the sick-benefit clubs were the journeymen's clubs associated with the old guilds, of which every journeyman had to be a member and to the fund of which he had to contribute, though the clubs were also supported in other ways by donations, etc. As, however, the cash benefit was not large enough to support a family, the older clubs were gradually supplemented by voluntary clubs which came to the assistance of the families during the sickness of the bread-winner.

When the guild system was abolished in 1862, the compulsory journeyman sick-clubs were transformed into voluntary working-men's sick-clubs. The necessity of making provision not only for medical aid but also for cash benefits for the support of the families during the illness of the bread-winner had already become a matter of common experience.

This laudable provision gradually became a habit with other people of small means as well, and clubs not connected with any special trade were started. The movement grew at such a rate that the number of sick-benefit clubs in 1885 was about 900, with 116,000 members, out of a total population of 2,076,000.

The conclusion that providence and thrift and the habit of saving up in prosperous times for a rainy day — whether sickness, old age, or reduced working capacity

very prominent characteristics of the Danish people would, however, hardly be wanted : these qualities are by no means inherent in the population.

But the system of voluntary and mutual insurance against sickness appealed to qualities which are rather characteristic of the Danish people, namely, a certain *kindness and helpfulness*, and a pronounced *sense of solidarity* within the individual classes or the different classes of society, and a marked *aptitude and inclination to co-operate* for the common good — an aptitude which has manifested itself so characteristically in the co-operative movement in Danish agriculture.

Moreover, it is a Danish national characteristic that the people will go very far as they feel that they are under no compulsion whatsoever. Conversely, any smacking of coercion is looked upon with suspicion and meets with more or less resistance. A comparison with the German people is instructive. In Germany, frugality and thrift can hardly be said to have been less common than in Denmark ; yet compulsory insurance was introduced and was met by no resistance, because the German mind submits to discipline and tutelage much more easily than the English.

In Denmark, the early years of the sick-benefit clubs coincided with a *democratic liberal movement*. From the very start, the members not only took an intelligent interest in the undertaking, as one likely to redound to their own advantage, but also largely grasped the moral significance of the system. The clubs were looked upon as newly-planted trees, the growth of which it was their duty to protect, and the responsibility of the members for the financial status of the clubs often caused them to refuse cash benefits to which they were entitled if they thought themselves unable to manage without them. This trait is characteristic of the voluntary and mutual, as opposed to the compulsory, system, which produces a much less considerate attitude and much greater insistence on the rights of the members.

The subscription could therefore be kept at a very low figure. This was facilitated by the fact that the clubs were largely administered gratuitously by persons interested in the cause, and by the receipt of additional income from bazaars, etc., and by the grant on the part of certain town councils of hospital treatment to the members on very favourable terms. The doctors, too, contented themselves with an extremely moderate remuneration for their services and did what they could to increase the membership of the clubs, because their professional experience taught them that the illness of a breadwinner of the poorer classes often spelled disaster to his family.

Under these conditions, the Danish sick-insurance system was evolved. Even in the early years of the existence of these clubs, they had to learn from experience, and they became in consequence, as it were, a spontaneous growth, the result of a natural process of evolution and adaptation. If at an earlier stage of their growth the State had interfered with supervision and pecuniary support, it is quite likely that such interference would have had an injurious effect on their natural development. The chief beneficial consequence of the self-supporting character of the clubs was the fact that they met with sympathy in all quarters and avoided becoming an object of public strife.

This brings us to the next phase in the history of the sick-benefit clubs.

In earlier times, Government Committees had been appointed to examine affairs of the sick-benefit clubs, but no legislation had resulted. It was not till the German Government began, in the early eighties, to introduce legislation for the protection of workers (a fact which was chiefly due to Prince Bismarck's desire to direct the revolutionary Socialist movement into more peaceful channels) that the Danish public began to take an interest in social legislation.

In 1885, a Committee was appointed, the primary task of which was to examine the question of compensation to industrial workers for injuries received during the performance of their work. The Committee, however, soon realised that, before the question could be settled, an efficient and extensive system of sick-benefit clubs had to be in existence. Accordingly, the most important achievement of the Committee was the drawing-up of a scheme for a Sick-Benefit Clubs Act, on which the Statute of 1892 was based.

B. — THE FIRST SICK-BENEFIT CLUBS ACT.

The Sick-Benefit Clubs Act of 1892, like the scheme drawn up by the Committee, retained the existing system of sick-benefit clubs and affirmed the principles on which it rested, *i.e.*, *voluntary and mutual insurance and aid to self-help*.

Voluntariness, Freedom, Autonomy.

Nobody was under the obligation to become a member of a sick-benefit club. The Act created the framework of a cheap, reliable, and efficient system of insurance, but it was in the nature of an offer; and it was left to the public to decide to what extent it would avail itself thereof.

Similarly, the sick-benefit clubs were given the choice of remaining, as before, completely independent and free from Government control, or of applying for Government recognition, the latter involving certain privileges and obligations.

The privileges consisted in a Government subsidy calculated on the basis of the total number of members and the aggregate amount of subscriptions; in the right to receive treatment at the State, county, and municipal hospitals at very reduced terms and in free conveyance, at the cost of the municipalities, for members residing in the country and having no carriage or horses of their own with which to fetch a doctor or a midwife or to take a patient to a doctor or a hospital.

In return for these benefits, the recognised clubs undertook a number of obligations relating to the field of their activities, their budgets and accounts. In addition, a minimum was fixed for the cash benefits payable to the members in case of sickness within specified periods.

Within the limits laid down by the Act, the sick-benefit clubs were, however, left to regulate their own affairs in the belief — which has proved justified — that such uniformity in their organisations as it might seem desirable to promote beyond what was actually provided for by the Act would be effected spontaneously by the well-known adaptability of the existing clubs and would, furthermore, be promoted by the *voluntary combination of individual clubs into central unions* for counties and provinces — a process which had already been initiated before the passing of the Act and which was rapidly completed.

The Act provided for an *Inspectorate of Sick-Benefit Clubs*, under the Home Office, duties of which consisted in supervising the clubs and, in addition, in giving them advice and assistance. Furthermore, a *Board* was established to advise the Inspector of Sick-Benefit Clubs and to represent the clubs in negotiations with the Home Office, under the jurisdiction of which the clubs are. The members of this Board are elected by the committee of the clubs.

Mutual Insurance.

Beyond the payment of the subsidy, the Government undertakes no guarantee for the solvency of individual sick-benefit clubs. Through the inspectorate and the accountants attached to that body, the Government to some extent supervises the accounts and finances of the clubs. It may also in certain cases give instructions to the clubs. The members take upon themselves a joint guarantee for the financial status of their club, as has been the case from the earliest history of the clubs, and it has therefore not been found necessary to safeguard their funds against excessive payments to individuals. A provision which applies to all other insurance societies as well. Accordingly, the Sick-Benefit Clubs Act fixes a time-limit for the period during which cash benefits may be drawn in cases of protracted illness.

Right to Self-Help.

The principle on which the Act rests is, however, as has already been pointed out, that of according aid to self-help, and even before the promulgation of the Act an earlier statute (the Poor Law of 1891) laid down that persons who have proved their inability to provide against sickness by entering a sick-benefit club might accept relief from the public funds without incurring the disabilities involved by the acceptance of such relief. At present, members of sick-benefit clubs may, without incurring any of these disabilities, receive relief from the public funds after the discontinuance of the cash benefits for a maximum period corresponding to that during which cash benefits have been drawn.

These generous provisions safeguard the sick-benefit clubs against expenditure, while at the same time securing to the members continued assistance from the municipal funds during protracted illness, without the necessity of falling back on poor relief.

It is characteristic of the independent and self-supporting origins of the sick-benefit clubs that they received the Act of 1892 without any show of enthusiasm. The Government authorities were distrusted *et dona ferentes*, and it was not till it was realised that the Act did not encroach upon the independence of the clubs more than was necessary to secure a tolerably uniform administration, and that their further development was left to the care of their officers, that an increasing number of clubs began to apply for Government recognition. From 457 at the end of 1893, the number of recognised clubs had grown to 1,014 at the end of 1899. Since then, the number has constantly been on the increase till the present time, when the unrecognised clubs have dwindled into an insignificant minority.

In 1915 and 1921, new Sick-Benefit Clubs Acts were passed. In the main, these follow the principles laid down by the original Act. Some amendments have, however,

been introduced in accordance with the wishes of the clubs themselves as expressed on various occasions.

C. — THE SICK-BENEFIT CLUBS ACT NOW IN FORCE.

I. — Organisation.

The scope of a sick-benefit club is generally limited to some special locality. Frequently, the clubs are connected with some special trade. In that case they may be open to all the less-propertied master mechanics, journeymen and apprentices of the trade within the district in which the club operates.

The clubs are autonomous. The members elect a committee and accountants at a general meeting and draw up rules for the conduct of the club, the payment of functionaries, etc., the rules being, however, subject to the approval of the Inspector of Sick-Benefit Clubs.

The clubs are organised into central unions for districts or counties. The latter, in their turn, have formed a central organisation for the whole of the country.

The central unions have gradually circumscribed the authority of the individual clubs in order to carry more weight in their negotiations with Government and municipal authorities, etc. They also enter into contracts with doctors, dentists, chemists and others whose services the clubs may require. In order to distribute the liability of the individual clubs, especially those of the smaller ones, the central unions have established a system of co-insurance against expenditure on behalf of members receiving treatment in lunatic asylums or tuberculosis sanatoria. Moreover, the central unions have established a mutual security fund, a joint insurance against accidents and a number of convalescent homes to which members of the individual clubs are admitted at fixed terms.

The Government Inspectorate of Sick-Benefit Clubs exercises a general supervision of the activities of the clubs; it sees that the rules of individual clubs are in accordance with the provisions of the law, examines the annual accounts, inspects the books and cash balance of the clubs at certain intervals, and settles disputes between the clubs and their members. Moreover, the Inspectorate gives the clubs the benefit of its advice and instruction. At annual meetings the Inspectorate and the officers of the clubs discuss any questions that may arise, so that a constant interchange of opinion and information takes place.

The Sick-Benefit Clubs Board is intended to safeguard the autonomy and independent development of the clubs. This body may be regarded as an official representation of the latter. The very important question of "transfer" (see below) and the settlement of all disputes arising out of that question have been left by statute to the Board.

By the right of transfer is meant the right of a member who leaves the locality in which his own club operates to be transferred to another club operating at his new place of residence — a right which is absolutely independent of his age or the state of his health. This right of transfer constitutes a great improvement of the state of things prevailing

ing the early years of the clubs, when each of them was an isolated unit responsible to its own members only. At the present day, though the individual clubs retain their independence for the purposes of their everyday operations, they are really small units in a national system of insurance.

II. — *Right of Admission.*

Membership of the clubs is voluntary, and admittance cannot be refused to any person who fulfils the statutory conditions as regards age, state of health, income and property.

- (a) The age-limits for admission are the fourteenth and the fortieth year.
- (b) The conditions as to the state of health are somewhat more detailed.

According to the first Sick-Benefit Clubs Act, persons suffering from chronic diseases were refused admittance or were only admitted on the understanding that they had no claim to cash benefits for incapacity caused by the disease in question.

This attitude was only natural in a club based on the principle of reciprocity. If members of a club undertook a joint responsibility for its financial status, it went without saying that the state of their health when admitted had to be approximately good as that of the other members, and that no member could be admitted who might be expected to cause exceptional expenditure.

Gradually, however, it was realised that this limitation provided for by the Act of 1892, though, no doubt, in itself sensible enough, was unfair to those members of the community who were not only poor but also suffering from a chronic disease which reduced their capacity for work and made it more difficult for them to avoid being reduced to pauperism.

Various remedial measures were proposed. The chief difficulty was, however, the fact that the sick-benefit clubs were in the nature of insurance organisations and that the calculation of the expenditure involved by the admission of persons suffering from chronic diseases seemed beyond the powers of actuarial science. It was, moreover, pointed out — by a medical man, by the way — that persons suffering from chronic diseases might be grouped in two classes : one class comprising those who, on account of not being completely incapacitated, were not, however, prevented by the state of their health from working regularly for long periods ; and one class comprising *invalids*.

The life-insurance companies were cited as a case in point. According to the practice followed by these companies, some applicants are admitted at the ordinary premium, while some have to pay a higher premium proportionate to the greater risk, and some are refused. It was pointed out that there could be no objection to giving persons suffering from chronic diseases — chronic invalids not included — the benefit of membership if the clubs were given an additional grant-in-aid from the public funds, so that the increased expenditure involved by the admittance of such persons was not paid by the ordinary members. As far as the permanent invalids were concerned, it was pointed out that the question was not one of insurance but of a pension.

These views were first advanced in 1910. About ten years, however, elapsed before they were adopted as the basis of the system now in force.

Persons who at the time of application are suffering from an acute disease, from the temporary recrudescence of a chronic disease, and persons who must be deemed totally incapacitated by a chronic disease, are *refused admittance*. ministerial proclamation lays down the principles according to which such cases are to be determined — principles which must be characterised as very generous.

Otherwise, not only persons in perfect health, but also persons who, without being totally incapacitated, suffer from an incurable disease or defect which entails, or seems likely in future to entail, a considerable reduction of their working capacity are admitted to membership. Such persons must produce a medical certificate stating the chronic disease from which they are suffering. In the case of persons in a perfect state of health, many clubs insist on a medical examination and certificate before admission to membership, but this is not required by law and may be replaced by a solemn affirmation stating that the applicant is in good health.

Each club keeps a separate account for each of the two groups of members: (1) those in perfect health at the time of admission, and (2) those suffering from chronic diseases. The State and municipal authorities between them pay over to each club a sum equal to the difference between the actual expenditure on the second class and the average expenditure on an equal number of ordinary members of the first class. Thus the additional expenditure caused by the admission of members of the second class is borne by the public funds, while the amount disbursed by the clubs per member remains exactly the same for both classes. The premiums and cash benefits are also the same for both classes, with the exception that persons suffering from chronic diseases at the time of admission cannot insure for more than half the maximum amount allowed in the case of other members (*i.e.*, 3 and 6 kroner respectively).

III. — *Pecuniary Conditions of Membership.*

As will have appeared from the historical introduction, membership of the sick-benefit clubs was originally limited to the poorer classes, *i.e.*, to such members of the community who, but for the clubs, would have had to fall back on private charity or poor-relief in case of serious illness. The general tendency has, however, for some time been towards a broadening of the basis of the insurance system; not only is the term "poorer classes" interpreted so liberally as to bring within the meaning of the term the great majority of the population (80 to 90 per cent) but people of some means are now also permitted to enter and to remain in the clubs.

At present, a distinction is made between passive and full members of the club. Passive members are persons of some means who, having fulfilled the usual requirements as to age and condition of health, are admitted to a club without the right to claim the assistance of the club in case of illness. Such members may, however, become full members if their economic circumstances alter for the worse. Similar rules

by to former full members who forfeit their claims to assistance by an improvement in their economic circumstances. These may, if the rules of their club so permit, again become full members on paying a higher subscription, and may go back to their old position if their circumstances again alter for the worse. For neither of these two classes — the more well-to-do members — those who remain full members at a higher subscription — nor those who are only passive members — do the Government and the municipal authorities pay any grant-in-aid.

By far the greater part of the members are, however, people of small means, the more well-to-do members being an almost negligible quantity.

Within the meaning of the Sick-Benefit Clubs Act, the poorer classes are taken to include working-men and other persons whose economical circumstances are approximately the same as those of working-men. Every three years the Home Office issues a series of rules according to which applications for membership are adjudged. Among the conditions taken into account are : the character and duration of the income of the applicant, his property and debts, the number of children, etc. To the rules are attached schedules stating the income and property qualifications for membership in the metropolis, in larger and smaller towns, and in the country respectively. To the maximum amount of income allowed may be added a specified sum for each child (present 400 kroner for the first child and 300 kroner for each additional child).

The observance of these rules is, however, not very effectively controlled. The Act does indeed impose upon the members themselves the duty of notifying the clubs of any improvement of their financial circumstances, but the committees of the clubs, whose duty it is to see that this rule is observed, have never taken much interest in this subject, and the Inspector of Sick-Benefit Clubs, who, in the interests of the exchequer, has to see that no grant-in-aid is paid for persons not entitled to such assistance, cannot easily check the lists of members without the assistance of the local experience of the committees.

As, moreover, the tendency is towards a wider interpretation of the term "poorer classes" and towards transforming the authorised sick-benefit clubs into a national insurance organisation rather than an institution for the exclusive benefit of one class of the community, a change has gradually taken place within the membership of the clubs, the more well-to-do element becoming increasingly predominant.

This element, which now constitutes the majority, has gradually modified the clubs to suit its own requirements. All the services rendered by the clubs to their members have improved in quality and quantity, and the resulting increase of the subscription is not felt very much by the more well-to-do members. The dark side of the picture is, however, the fact that the high subscription is making it increasingly difficult for the poorest members to remain in the clubs.

This development is fraught with so much danger to the continued social usefulness of the clubs that it will be necessary, sooner or later, to take steps to check it. In 1921, definite proposals were made, in medical quarters, for the adoption of the principle that the clubs should be paid a large subsidy from the public funds in order to enable them to reduce the subscription of their poorest members, a scheme which is in good keeping with the fundamental principles of the Sick-Benefit Clubs Act. So far, the proposal has, however, not been very widely accepted. The opposition which it has met with on the part of the clubs themselves, in spite of its humane character, is probably due to the fear that the Government will compensate itself for the larger grant

to the poorest members by cutting down the grant to the more well-to-do members. Moreover, the question has been mixed up with party politics.

Both men and women may become independent members of the sick-benefit clubs. Children and foster-children living at home are covered by the insurance if the age of fifteen if both of the parents are members.

IV. — *Services rendered by the Clubs.*

The following services are compulsory :

1. Medical attendance.
2. Hospital treatment (including treatment at a public lunatic asylum or tuberculosis sanatorium).
3. A daily cash benefit in time of illness varying between 40 oere and 6 kroner.
4. Assistance to women in childbirth, the sum payable being not less than 1 kroner per day till ten days after the delivery.

The following services are optional, and are rendered if provided for by the rules of the individual clubs :

1. Specialist attendance.
2. Dentistry.
3. Medicine (up to three-fourths of cost).
4. Nursing at home by trained nurses.
5. Sojourn in convalescent homes.
6. Treatment at one of the Red Cross popular health resorts, more especially those for the treatment of neurotics and patients suffering from rheumatic diseases.
7. Massage.
8. Bath cures.
9. Bandages, dressings, and artificial limbs.

The clubs largely make use of their right to include these services in their insurance schemes. Consequently, the benefits to which their members are entitled are very comprehensive. They cannot, however, be characterised as very cheap, in spite of the fact that the Government contributes one-fourth of the expense in the compulsory services and on Numbers 1 to 7 of the optional services, thus encouraging the clubs to include the latter in their insurance schemes. Over and above this subsidy, which is calculated on the basis of the expenditure of the clubs, the Government pays a grant-in-aid of 3 kroner per member.

In addition, country parishes are bound by statute to provide free conveyance for doctors and midwives and for members (and their children) who have to be taken to a doctor or a hospital.

V. — Time-limit of the Services.

The right to draw cash benefits must extend over a period of 26 weeks during twelve consecutive months. If a member has been in receipt of relief for 60 weeks during three consecutive financial years, he forfeits the right to any further assistance from the club. According to the Poor Law, such a member may, however, if he is in want of assistance in consequence of illness, receive relief from the public funds, without incurring any of the disabilities entailed by the acceptance of poor relief, to an amount equal to that which he has already received from his club. When the relief from the public funds is discontinued, he may again resume his rights as a full member of a sick-benefit club.

VI. — The Premium.

In a recognised sick-benefit club the premium to cover, when supplemented by the Government subsidy, all the liabilities of the club and to form a reserve fund, which must normally be equal to the average expenditure for the three previous financial years.

The premiums are graduated proportionally to the cash benefit contracted for each member.

The average premium has undergone a very considerable increase, as will be seen from the following table :

	Average Premium per Member.			
	1916		1921	
	Kroner	Oere	Kroner	Oere
Metropolitan clubs	14	68	26	04
Clubs in provincial towns	11	57	22	65
Country clubs in the Island Provinces	5	61	12	69
Country clubs in Jutland	5	50	11	10
Clubs in South Jutland (Slesvig)	—	—	24	28
Average for all clubs	8	68	17	38

As, however, the official index-number rose from 136 in August 1916 to 237 in August 1921, there seems to be no reason to be alarmed at this increase of the nominal height of the premiums, which roughly corresponds to the rise of the cost of living. It is, however, asserted that, in spite of this fact, the actual height of the premium has the effect of making the clubs appear too expensive in the eyes of the poorest classes.

From May 1921, an *invalidity insurance premium* is collected, together with the ordinary subscription. The height of this premium, which is *compulsory for all members of the sick-benefit clubs*, is seen from the following schedule :

For persons whose membership commences between 18 and 25..	5 kroner	40 oere.
“ “ “ “ “ “ “ “ 25 “ 33..	7 “	80 “
“ “ “ “ “ “ “ “ 33 “ 40..	10 “	20 “

Members under 18 and over 62 are exempted from the payment of this premium.

VII. — *Relations with the Medical Profession.*

The relations of the sick-benefit clubs to the medical profession are as follows.

Between the central unions of the sick-benefit clubs and the medical associations agreements are negotiated with reference to increasingly large districts.

Everywhere outside the metropolis the choice of physician is free, every member being entitled to consult whatever doctor he prefers. This humane arrangement is due to the efforts of the medical associations, and has been carried in the teeth of considerable opposition on the part of the clubs. The doctors' fees are fixed by contract, either at a certain amount per annum for each member — the treatment of children and foster-children being free — (Tariff I) or according to the treatment received, a tariff of fees being fixed by contract (Tariff II).

According to the Sick-Benefit Clubs Act, the clubs are under the obligation to provide their members with medical assistance free of charge. It is not easy to see how this provision can be reconciled with another clause of the Act which provides that, if no agreement with a medical man exists, or if such an agreement, having been concluded, is not sanctioned by the Home Office, the club in question may not provide its members with medical assistance. Instead, the club must either make due provision for a reasonable increase of its other services or it must refund a specified proportion not exceeding three-fourth of the doctors' fees paid by its members.

To settle disputes between the sick-benefit clubs and medical men, the Act provides for the establishment of a Board of Arbitration, three members of which are elected by the joint central unions of the clubs, while three are elected by the Medical Society. The chairman, at the present time a judge, is elected by the six members.

Besides placing their professional assistance at the disposal of the members, the doctors naturally exercise a considerable influence on the working of the clubs; and as they are the persons who issue certificates of illness or health, it is in their power to see that abuse does not take place. It is therefore essential to the success of a club that good relations should be established between its officers and medical men. The leaders of the sick-benefit clubs are not quite alive to this fact — so, at least, it appears to a medical man — and are apt to think that Government control of doctors' fees, which they in general look upon as too high, would be in the interest of the clubs.

This, however, is not the place to enter into the somewhat strained relations subsisting between the two parties. It need only be said that judicious intervention has so far, prevented graver conflicts.

D. — MEMBERSHIP AND PROPERTY OF THE SICK-BENEFIT CLUBS.

Year	Members	Percentage of total Population over 15 years of age	Aggregate Property. Kroner	Property per Member
1893.....	116,763	7.9	950,000	8.37 kronor
1921.....	1,333,065	59.9	20,778,000	15.59 »

The fact that 59.9 per cent of the adult population belong to the clubs does not give a true picture of the extent to which the population benefits by their services. It has already been mentioned that membership of both parents involves the insurance of children under fifteen. The number of children thus insured is not available, but it may be taken for granted that the total number of persons insured, including the children, will be found to bear a still larger proportion to the total population.

Not only may it be taken for granted that the families of the poorer classes are, on the whole, somewhat larger than those of the upper classes but it must furthermore be borne in mind that of those who remain outside the clubs the aged (above sixty) in 1921 still received free medical treatment at the expense of the municipalities as part of their old-age pensions (as provided by the Old-Age Pensions Act), while the young and unmarried, who have fewer responsibilities and cares, are naturally less inclined to become members.

E. — REVENUE AND EXPENDITURE DURING 1921.

The total revenue was 32,572,125 kroner. Of this sum, 22,980,000 kroner were paid by the members, while 8,665,000 kroner were paid over by the public funds. The public subsidies — in which the reduction of hospital fees, etc., and the free conveyance provided by the municipalities are not included — has increased to 1,194,000 kroner for 1921 — a fact which does not appear in the accounts till 1922.)

The total expenditure was 30,136,000 kroner, and was distributed as follows :

	Percentage of total.
Cash benefits	14.3
Assistance to women in childbed.....	2.2
Hospital treatment, sojourn in convalescent homes, etc.	12.9
Ordinary medical attendance, specialist attendance and dentists' fees ...	45.4
Medicine	10.1
Administration.....	11.9

To the sick-benefit clubs are attached the so-called *burial clubs*.

It is left to the discretion of the sick-benefit clubs whether or no they will insure their members against funeral expenses, and no subsidy is granted from the public funds. The burial clubs are, however, subject to the supervision of the Inspector of Sick-Benefit Clubs — a supervision which chiefly takes the form of advice in financial matters.

At the end of 1921, there were 1,407 burial clubs, with a total membership of 9,000 and an aggregate property of 9,738,000 kroner.

It has already been mentioned that the *invalidity insurance organisation* is closely connected with the sick-benefit clubs, all active members of the latter who are not in affluent circumstances being under the obligation to insure against invalidity.

In addition to the premiums paid by the members, the clubs receive a contribution from the employers, who, according to the Workmen's Compensation Act, are

under an obligation to insure. This contribution amounts to 5.40 kroner per annum for every worker employed during the whole of the year, this sum being supplemented by the Government and the municipal authorities.

The benefits of this insurance consist of an annual pension of 800 kroner in case of invalidity and, under certain conditions, the payment of the cost of cures, doctors' fees, etc.

Finally, the so-called *continuation funds* are also under the supervision of the Inspector of Sick-Benefit Clubs. These are associations administered in connection with a recognised sick-benefit club or one of the central unions. They are intended for members of the sick-benefit clubs who are prevented from remaining full members of the latter owing to an improvement of their financial circumstances. No public subsidy is paid, but, if the financial circumstances of a member are altered for the worse, he may re-enter his old club irrespective of his age or the state of his health.

The reader will have understood from the above into what a comprehensive system of insurance the Danish sick-benefit clubs have developed. Through these clubs innumerable men and women have been assisted not only as regards *sickness* but also as regards *the economic consequences of disease*. Medical men who take an interest in social questions cannot help admiring the achievements of the chosen leaders of the clubs in creating a strong and enduring organisation and a system of insurance of the greatest economic stability, and their constant efforts to broaden the basis of the system and to make it increasingly beneficial to the participants.

As an indirect effect of the activities of the clubs may be mentioned their influence on the *spread of knowledge of diseases and their treatment, of sanitation, and the combat of disease*. Even in remote districts in which the inhabitants had formerly to cover such great distances in order to get medical assistance that it generally arrived too late, it has now been found possible for medical men to carry on a practice — a fact which is very advantageous to the medical profession, and still more so to the local population and the community. The sick-benefit clubs are of the greatest *utility to the Public Health Service*, and it is chiefly owing to them that it has not been found necessary to establish infant and child-welfare institutions in Denmark to the same extent as in other countries. One effect of the spread of the clubs is that cases of disease, more especially of consumption, are detected comparatively early. The importance of this fact both to the individual and the community, can hardly be over-estimated. The subsidy paid to the clubs from the public funds is to a great extent in the nature of a grant to the Public Health Service. If this subsidy were not paid, it would, no doubt, be necessary to spend much more on that service, with no better results for the object in view *i.e., the prevention of disease*.

Finally, the sick-benefit clubs have a great *educational value*, owing to the voluntary basis on which they rest.

The sick-benefit clubs have taught the classes to which they appeal to be provident and to make provision in time against sickness and distress. They have produced a sense of *responsibility* and *self-respect among the poor*.

No longer, as in earlier times, is it necessary for the poor to beg the public authorities or private charities for alms. The relief which people of small means receive from the sick-benefit clubs is a well-deserved right acquired by personal sacrifices — help to self-help.

The authorised sick-benefit club organisation of Denmark is not a charitable institution : it is a self-governing system of voluntary insurance, resting on the solidarity of the people.

SOCIAL LEGISLATION IN DENMARK.

BY POVL HOLCK and H. B. SOMMER-ANDERSEN,

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The social legislation in Denmark has during the last decades been exceedingly specialised and there are at present more than forty social laws in force. Before the 'nineties there were only, apart from the provisions regarding actual poor relief, two social laws, but during these decades the following important bills were passed: the Poor Law Act 1891, containing regulations for the bestowal of relief, both with and without loss of civil rights; the Old Age Relief Act of 1891 for the deserving poor in receipt of relief from the Poor Law Administration; the Sick-Benefit Club Act 1898 and the Accident Insurance Act 1898, which form the basis of the present social legislation; the Public Assistance Fund Act (*Hjælpekasserne*) 1913; the Old Age Pensions Act 1922 and the Child Welfare Acts are, in addition to the above Poor Law Act (which — with some few amendments — is still in force), all public relief Acts according to which public assistance does not depend upon contributions on the part of the recipient. Insurance Acts, on the other hand, are the Sick Benefit Club Act 1898, the Invalidity Insurance Act 1921 and the Unemployment Act 1921, all of which are based on the principle that the public funds grant help to those helping themselves, and by these Acts the insured person pays a certain fixed premium and the State and the municipalities grant subsidies; the only actual compulsory insurance is to be found in the Accident Insurance Act (June 28th, 1920), where, however, it is not the insured person, but — as in other countries — the employer, who has to bear the whole expense.

The following are the present laws on public relief and insurance:

1. *The Poor Law Act 1891, with subsequent Amendments.*

By this Act, the public authorities are bound to aid everybody unable to provide for himself or herself with the necessities of life, or treatment and nursing in cases of illness. This also applies to foreigners until they are repatriated. The relief is either given at home or at institutions or through private treatment. The poor relief is administered by the municipal council. The relief must be rendered by the municipality wherein a person becomes destitute, but the municipality has the right, provided the person in question is not entitled to relief there, to demand the refund of three-fourths of the cost.

the expenses incurred from the municipality where the individual is entitled to relief. With some few exceptions, the municipality is the one where he or she, after attaining the age of 18, has had five years' uninterrupted residence without poor relief.

In order to prevent persons from applying for relief from the Poor Law Administration, the following conditions are imposed, *viz.* : loss of franchise ; control and supervision by the Poor Law Administration ; compulsory return to the municipality where applicant is entitled to relief ; prevention of marriage of a pauper without the consent of the Poor Law Administration ; exclusion, for a time in any case, from various forms of public support.

Poor relief proper is only applied when the legislation does not permit the municipalities to grant relief except under the conditions mentioned above.

Besides the Poor Law Act, many subsequent acts grant the municipalities the right to do away with actual poor relief. By the Poor Law Act, § 61, March 29th, 1920, an expense charged to the public funds for the education, sustenance, support, treatment and nursing of the blind, deaf and dumb, idiots, insane, epileptics, deformed, maimed, tubercular, scrofulous and lupus patients, as well as stammerers and other persons suffering from defects of speech, including palatochisis, is not considered as poor relief, provided the individual in question is placed in a public institution or an institution recognised by the State for that purpose or by such an institution placed in charge of private persons under its permanent supervision. The blind are granted relief which does not come under poor relief, even if their treatment has not been carried out in the above manner.

The relief granted to a man entitled to relief from the municipality for treatment and nursing after the cessation of the benefit from a sick-benefit club, or for the necessary maintenance of himself or his family, is not, in accordance with § 63, of Act No. 10, May 6th, 1921, regarded as poor relief, provided the expenditure does not exceed the benefit received by the member of the sick-benefit club in the course of the financial year during which the benefit ceased or the benefit granted during the two previous financial years. Moreover, the municipality grants relief to needy persons entitled to relief who, for the last three consecutive years, have not complied with and still do not comply with the health conditions necessary for admission to an approved sick-benefit club (see below, subsection 5). Apart from the cost of treatment and nursing, relief granted may not, however, exceed 800 kr. per annum.

Under the Poor Law, relief not subject to the conditions mentioned above is granted for the payment of doctors' midwives' and burial expenses ; for the conveyance of paupers ; for the repatriation of shipwrecked seamen and for the care of the families of serving soldiers in war-time. Under the Immorality and Venereal Infection Act, No. 1, March 3rd, 1906, persons suffering from venereal diseases are, regardless of their economic circumstances, entitled to treatment at the expense of the public funds and are obliged to report themselves for treatment unless able to prove that they are receiving private medical treatment. The expenses incurred thereby are defrayed by

the public funds under the Poor Law, without the consequences attendant upon poor relief.

Under the Epidemic Act, June 30th, 1919, persons suffering from infectious diseases, e.g., typhus, diphtheria, scarlet fever, must, regardless of economic circumstances, be admitted for treatment at the expense of the public funds; similarly, public treatment is compulsory in cases of certain malign diseases, such as plague, cholera, etc. Under the Act of March 17th, 1922, a *State subsidy for the treatment of tuberculosis is granted* and, without the conditions attendant on actual poor relief, relief is granted for the maintenance of the patient's family during his stay at a tuberculosis hospital.

As it is comparatively easy to obtain relief free of conditions, only a few people in Copenhagen one per cent — are in receipt of actual poor relief.

2. *The Public Assistance Fund Act, April 29th, 1913 (Hjælpekasser).*

The Public Assistance Fund is not administered by the municipal council, but by special executive committees elected by the population in each municipality. The duty of these committees is to grant relief to the deserving poor who are trying to support themselves without applying to the Poor Law Administration. The relief is conditional on permanent residence in the municipality, and certain, by no means unreasonable, conditions are made as to the moral status of the applicant. Foreigners are not excluded. The relief is in each case granted at the discretion of the committee but is rather limited, for, as a rule, a whole year must elapse before further assistance can be granted to an individual who in the course of eighteen months has received more than 180 kr.

In the case of persons of over 55 years of age this limitation, however, does not apply. The Public Assistance Fund is almost exclusively procured by contributions from the municipalities. At present, the State only grants a subsidy amounting to 750,000 kr. : during the war and in the year immediately following it, the State granted one-third of the total expenditure. In 1922, the Public Assistance Fund paid out about 10,000,000 kr.

3. *The Old Age Pensions Act, August 7th, 1922.*

The law on old age relief (now repealed) did not grant old persons any legal right to relief, but the Old Age Pensions Act, April 1st, 1923, grants them such right on certain conditions are complied with. In order to qualify for an old age pension, an applicant must possess Danish nationality, have resided five years in the country and attained the age of 65; must not have been convicted of any dishonourable offence.

The applicant pays no contribution or premium. The figures below show the annual grants to applicants 65 years of age :

	Metropolis	Provincial towns	Rural municipalities
	Kr.	Kr.	Kr.
Married couples	1,008	804	600
Single men	552	444	330
Single women	504	402	300

For every year between 65 and 68 that a person waits before applying for a pension, annuity increased by about 10 per cent is granted, but no increase is given to those already benefiting by the annuity. A supplement is added to the annuity in years when the cost of living is high. Should the income of the pensioner exceed half the annuity (without supplement), by 100 kr., *e.g.*, in the case of a married couple in the metropolis 604 kr. and for a single woman in the country 250 kr., the annuity is reduced, should the income of a married couple in the metropolis exceed 1,820 kr. or that of a single woman in the country exceed 710 kr., the respective annuities cease automatically. If the pensioner is in possession of private means or income derived from a pension or municipal pension, special reductions are made.

In addition to the annuity, the municipal council may, on application from a pensioner, grant hospital treatment and other relief in cases of illness. A supplement of 10 per cent of the annuity may be granted to the surviving husband or wife. Admission to an old-age home may be substituted for a money grant.

The municipality where the pensioner resides pays the old age pension and has the right to claim a refund at three-fourths of the expenditure from the municipality in which the individual belongs. The Exchequer reimburses the municipalities one-twelfth of their expenditure towards old age pensions. The Act will this year probably entail a total expenditure of 70,000,000 kr. by the State and the municipalities.

4. *Child Welfare Act.*

(a) Under the Act of April 29th, 1913, regarding *relief for children of widows* (Acts of March 4th, 1918, and March 30th, 1920), relief is granted for the maintenance and education of orphans and the children of widows, without any ulterior conditions. To be entitled to relief, the widow's means must not exceed 4,000 kr. with the addition of 500 kr. for each child under fourteen years of age, 700 kr. in provincial towns or 600 kr. in the country, and her annual income must not exceed 4,000 kr. in the metropolis, with the addition of 100 kr. for each child. This relief is granted by municipalities, half of the costs being reclaimable from the State, and consists from 120 kr. to 200 kr. per annum according to the age of the child.

(b) Under the *Illegitimate Children and their Parents Acts*, May 27th, 1908, maintenance of the child must be assisted according to the mother's circumstances, whether married or single, and under conditions corresponding to these in a home approved as satisfactory for boarded-out children. The father's contribution must normally be calculated as three-fifths of the resulting costs, and is compulsory until the child has attained the age of eighteen; but may be reduced or annulled from the fourteenth year. Furthermore, the unmarried mother is entitled either to relief from the father *before the birth of the child* or to public relief, with all its consequences, at the father's expense. The

contribution is 20 kr. the beginning of the ninth month of gestation and 45 kr. immediately after delivery. Should the father fail to pay the contribution as laid down by the authorities, the mother, if she is not able to support the child, can obtain the money from the authorities without exposing herself to the consequences attendant on poor relief; these being incurred, as stated, by the father.

(c) A completely or partially divorced or deserted wife has similar rights to relief from public funds for the support of her children, without the consequences attendant upon actual poor relief, under the Legal Position of Wives and Legitimate Children Act, April 29th, 1913.

5. *The Invalidity Insurance Act.*

The Invalidity Insurance Act, No. 253, May 6th, 1921, forms a supplement to the Sick-Benefit Club Act, for paragraph 1 of this Act provides that all members benefited by an approved sick-benefit club, and who may be regarded as being without means (under paragraph 6 of that Act), are insured against disablement according to the regulations of the law.

Whilst the Invalidity Insurance Act in principle appears to be compulsory on those who, in accordance with the Sick-Benefit Club Act, have voluntarily subscribed to insurance against illness, there is, however, in certain cases an opening to continue the insurance voluntarily.

Economically, the law depends upon the payment of premiums by the insured person, contributions from employers in accordance with the Accident Insurance Act, and subsidies from the State and the municipalities.

The premiums of the compulsory insurance are payable in fixed yearly sums, the amount of which is determined by the age of the individual on first becoming insured; thus, the lowest yearly premium, 5 kr. 40 öre, is payable by all becoming insured before attaining the age of 25 years. The premium for voluntarily insured is the amount that the person in question would have paid as a beneficiary and impecunious member of a sick-benefit club. The premiums are collected together with the sick-benefit club subscription.

The contribution of the employers is, under the Act, 5.40 kr. for every worker employed by the year. Contributions are collected by the insurance company concerned, together with the premium for the statutory accident insurance, and as the premiums for the latter are calculated in various ways, *e.g.*, per worker employed, in proportion to number of working days, or on the basis of the rateable value of the employed premises, more detailed regulations governing the calculations of contributions in various cases have been established in a memorandum issued by the Ministry of Home Affairs, October 31st, 1921.

The remainder of the amount necessary for the insurance is made up as follows. One-half by the Exchequer and one-half by the municipalities, divided amongst the latter in proportion to the number of impecunious members of sick-benefit clubs residing within them at the end of each year.

The premiums, contributions and subsidies are paid by the sick-benefit clubs, insurance companies, the State, and the municipalities respectively into a fund — the Sickness Insurance Fund — which by these means furnishes the statutory invalidity annuity.

The benefit under the Act consists of an annuity of, as a rule, 800 kr. In the Act itself more detailed regulations are given regarding the reduction of the amount should the annuitant be in receipt of a pension from State or municipality, or have any compensation under the Accident Insurance or other similar Act ; the annuity cannot, however, be reduced by more than two-thirds.

According to calculations made during the preparation of the Act, it was estimated that the State expenditure after a few years would amount to 2,600,000 kr. annually, and then rise slowly until a maximum of about 5,200,000 kr. was reached. The municipal contribution would amount to a similar sum, and the total expenditure was estimated at 18,000,000 kr. per annum.

The Act is administered in virtue of two independent institutions, *viz.* : the Invalidity Insurance Fund and the Invalidity Insurance Tribunal, the functions of which are so closely related to the provisions under the Act regarding persons entitled to an invalidity annuity that we may well begin with the latter.

Besides membership in a recognised sick-benefit club and the payment of certain premiums already mentioned, the qualifications required for obtaining an invalidity annuity are the following : the individual in question must have been a member of a sick-benefit club for at least one year immediately before application is made ; he or she must be a Danish subject, resident in the country and not over 62 years of age ; finally, the working capacity of the applicant must be reduced by two-thirds or more.

Apart from the last-mentioned condition, regarding which the Invalidity Insurance Tribunal will have to decide, it rests upon the board of the Invalidity Insurance Fund (consisting of a chairman appointed by the Ministry of Home Affairs, a member chosen by the Minister of Finance, and the chief inspector of the sick-benefit clubs) to see that all other necessary conditions are fulfilled. As the chief inspector of sick-benefit clubs is a member of the board and administrator of the fund, it is clear that close relations exist between the Invalidity Insurance and the Sick-Benefit Club Acts.

The Invalidity Insurance Tribunal consists of a president, who on appointment must satisfy the requirements necessary to become a county judge ; two medical members ; two members who, when first appointed, must fulfil the conditions stipulated in paragraph 6 of the Sick-Benefit Club Act, *viz.*, must be impecunious members of a recognised sick-benefit club ; and one member who is an employer of labour. For each of these members a deputy must be named.

To participate in the meetings of the Tribunal (but without voting rights), a member of the Workers' Insurance Council, chosen by the Crown, and the chief inspector of the sick-benefit clubs are ordered to join the Tribunal ; further, one of the Tribunal's physicians is always present at the meetings.

The main task of the Tribunal is to determine whether the working capacity of the insured person has diminished by at least two-thirds, and for the guidance of the Tribunal the Act lays down the following provision in paragraph 3 :

“By disablement under this Act, is understood a working capacity diminished by at least two-thirds. Such a reduction of working capacity is present when the individual in question, pursuing an occupation suitable to his strength and skill, with due consideration of his training and former activities, is no longer able to earn one-third of what physically and mentally sound persons having had similar training in the same districts usually earn at work.

“The insurance scheme does not cover disablement brought about purposely by the insured person.”

This wording shows that disablement within the meaning of the Act is something totally different from disablement in general. Moreover, the former does not entirely depend upon the insured person's state of health, neither does it depend alone on his capacity or incapacity to earn one-third by continuous occupation at his or her former livelihood ; but these two factors must be combined, partly with each other and partly with the judgment as to what kind of work can be demanded of the insured person and whether he or she may be presumed thus to earn one-third more or less.

The decision of the Tribunal must be arrived at in every single case from an investigation as to *whether the individual applicant can earn one-third*. The individual circumstances of every single applicant must, therefore, be submitted to rigorous investigation in every respect that may be presumed to have a bearing on the decision. Primarily, *the state of health of the applicant* is taken into consideration, for, as a rule, this forms the basis of the claim. As already mentioned, the physical or mental state of the applicant is only one of many important factors, and the physician — i.e., the doctor attending the applicant, the specialist and the medico-jurist — must, therefore, as far as possible, only deal with this side of the question. He must, in a detailed manner as possible, state the objective findings, his diagnoses, the influence of the disease or complaint on the applicant's capacity for doing the work he has hitherto undertaken, and his capabilities as regards the utilisation of his remaining bodily or mental strength. Finally, the physician must give his opinion as to the prospects of the future course of the disease, and, to the best of his ability, his judgment regarding the applicant's total capacity for work, from a medical point of view.

Thereupon it must be investigated *whether the applicant can earn one-third*. The most conspicuous factor here is the actual earnings of the applicant, but this in and for itself, cannot be decisive but merely guiding. What has to be determined according to paragraph 3 of the Act, is the applicant's *working capacity*, and the actual wages earned will not, in many cases, express a proportional working capacity. In some cases the actual earnings are due to special considerations on the part of the employers towards the insured persons, either on humanitarian grounds, owing to former long service under the same employer or due to friendship or relationship, the like, or, finally, as a result of the work of others, which, for instance, often is the case with independent property owners. In other cases the actual earnings are due to an abnormally long working-day, and in others the lack of possibility of finding employment, which, again, may be due to the applicant's place of residence, increased unemployment in general or similar circumstances.

As it is the *working capacity* of the applicant that has to be decided by the Tribunal, the latter is to a certain degree guided by the actual earning, but has further to investigate the whole of the applicant's position in trade in relation to the open labour market, and to decide as to whether he, when competing with persons fit for work under similar conditions, can earn one-third.

In judging this point, the Tribunal must not consider whether the applicant is or is not able by reason of trade conditions to follow his former calling and thereby earn one-third. The Invalidity Act does not admit of the conception "trade invalidity". Therefore, the former occupations of the applicant are of interest, only in so far as they may be a determining factor when judging of the kind of occupation which might now be required of him. As regards this decision, it is not possible to lay down fixed rules, except that the Tribunal, under the Act, must consider not only the applicant's training and former occupation, but also his strength and skill.

There is, however, another factor to be investigated by the Tribunal in this connection, for, even if an investigation in respect to health and working capacity shows the applicant to be presumably able to carry out certain work whereby he (or she) can earn one-third, the object of the enquiry — *viz.*, the determination of the applicant's working capacity in the open labour market — has not in fact been attained if a close examination reveals that the person in question has no possibilities of employing that working capacity, taking his health and skill into consideration.

It is a matter of course that the applicant's *possibilities of subsistence* must also be investigated, inasmuch as it is only of theoretical interest to know that he can do this or that if the circumstances, in the community where the applicant has to live, show the possibility of utilising that "capacity".

On considering this question of subsistence, many difficulties crop up, but abnormal conditions in the labour market, *e.g.*, widespread unemployment, should not influence the issue. Such abnormalities must be ignored and the possibilities of the applicant's employment should be judged from a fairly normal labour market.

Just as the investigations regarding health and working capacity must be directed towards the individual applicant's circumstances, the investigation of possibilities of subsistence must hinge upon the extent to which a certain individual, with such-and-such physical or mental defects and such-and-such capacity to do certain kinds of work, can utilise this capacity. Here, however, it is necessary to note the general aspect of the labour market and to make it a rule to disregard the fact that quite peculiar conditions, accidental circumstances in individual cases, have perhaps been brought to bear and have procured the applicant employment that, under ordinary circumstances, there would have been no possibility of obtaining.

The foregoing remarks may thus be summarised. The possibility of employment of an applicant is arrived at by combining his individual circumstances (state of health, capacity, age, etc.) with the general aspect and state of the labour market and existing conditions at the applicant's domicile.

These enquiries regarding the mode of procedure during the investigation as to whether the applicant can earn one-third cannot, however, be carried out separately but must be treated in strict conjunction with the investigation as to how, in individual cases, this one-third is arrived at.

Paragraph 3 of the Act places one-third in proportion to "that which physically and mentally sound persons, having similar training in the same district, usually earn by labour". The law thus demands that the individual applicant's working capacity, or rather the value of such, be compared with another and more definite value; therefore, an investigation must be made as to what the invalid's earnings are to be compared with, *i.e.*, what value forms the *basis of comparison*.

In the wording of the Act a certain relevancy is required with regard to this basis of comparison, partly as to the occupation and partly as regards domicile, *i.e.*, that the working wages which the Tribunal supposes the applicant capable of attaining must be compared with the working wages that a healthy workman, with similar training in the same branch of trade or industry as that of applicant, can earn by work in the district where the applicant resides when his case is submitted for adjudication.

The value of wages and the basis of comparison will in many cases adjust themselves, *e.g.*, in those cases where the applicant, until the very day invalidity sets in, has been employed at a trade or industry for which reliable statistics of wages are forthcoming, varying according to metropolis, provincial towns and country. If these statistics are submitted with a statement of average yearly income, it will be possible to use it as a basis of comparison; should they, however, be submitted as the average weekly or monthly wages, it is necessary, when calculating, to make allowances for the normal unemployment percentage of the trade or industry in question.

On this point the regulations of the Act will involve a difference in the estimate as regards individual applicants, according to whether the basis of comparison is high or low. In the former case, a comparatively greater working capacity is needed to earn a working wage of one-third of the basis of comparison than in the latter.

In other cases, where reliable wage statistics are unobtainable or where the applicant is an independent tradesman or housewife, considerable difficulties are encountered. In the first case, it will be necessary to refer to the trade unions or in some other manner to seek to procure as reliable a basis as possible for the estimate; in other cases it will be necessary to make extensive investigations to find out what it will cost to procure and pay another to do the applicant's work. From the above it will, presumably, be apparent that the estimate of the Tribunal as to the degree of invalidity within the meaning of the Act, *viz.*, working capacity, requires care as regards many different particulars and may be considered a combined medical, social, economical and legal estimate; for this reason, the varied composition of the Tribunal can be understood.

Should the finding of the Tribunal reveal that the working capacity of the applicant has not diminished according to the statutes of the Act, the matter is dropped. But should the Tribunal agree to disablement within the meaning of the Act, it will then, pursuant to paragraph 16 of the Act, have to decide whether the reduction of working capacity is permanent or temporary. It must be noted that the Tribunal's decisions are *final*.

The finding, "permanent invalidity", may be said to imply that there are no prospects of improvement in health, or that it is only considered possible to bring about improvement by operation for which no responsibility dare be accepted. This conception scarcely calls for further remarks. The conception, "temporary invalidity", therefore, will hardly occasion any great doubts either, for the basis of the latter is that the possibility of improvement of working capacity is regarded as probable, either by treatment, instruction, training, transference to another occupation, or otherwise. Beyond these differences between "permanent" and "temporary" disablement, there is merely to be added this: that the right to receive an annuity in the first case takes effect immediately, whereas, in the second case, it depends upon specified regulations, when the right to a daily allowance, granted during illness, has ceased.

The conception, "temporary invalidity", however, still requires limitation in one respect, *viz.*, as regards illness. The Act was never intended to cover granting an invalidity annuity in cases of brief inability to work on account of acute illness (*cf.* partly the words in § 3 and § 17, 3rd section), for the sick-benefit insurance normally covers the loss incurred by such inability to work.

The Tribunal has, furthermore (*cf.* its first annual report, page 31), announced that "an applicant, presumed to be suffering from a disease that, according to its nature or its previous course, does not appear to occasion any lasting diminution of working capacity to one-third or less", cannot be considered as an invalid within the meaning of the Act. A definite statement as to the Tribunal's mode of procedure when exercising this judgment cannot be given, but in doubtful cases the Tribunal will, as a rule, in consideration to the applicant, defer the decision for a certain time, in order to procure a more extensive basis for adjudication rather than give an immediate decision of non-invalidity.

Finally, under paragraph 16, section 2, of the Act, the Tribunal is authorised to decide that, "under the authority of the Invalidity Insurance Fund, the applicant can be provided with surgical bandages, artificial limbs, spectacles and similar aids considered to be expedient to remedy permanent invalidity". This provision scarcely calls for further remarks, except to emphasise the fact that this power is only granted to the Tribunal in cases where its decision implies invalidity within the meaning of the Act.

During the two years the Act has been in force, the Tribunal has given its decision approximately 11,000 cases. Official statistical returns regarding the 5,082 decisions made during the first year are forthcoming, of which the following two are quoted from the first annual report of the Invalidity Insurance Tribunal, pages 71 and 74-77).

The first shows the distribution according to the nature of the decision given:

Number of Decisions given in 1921-22.

	Men	Women	Total	Percentage
Non-invalidity	523	266	789	15
Temporary invalidity	332	343	675	13
Permanent invalidity	1,644	1,974	3,618	71.2
Gross total	2,499	2,583	5,082	100

The second shows the distribution according to the principal medical grounds of invalidity :

	Non-Invalidity			Temporary Invalidity			Permanent Invalidity			Total		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
I. Metabolic diseases and internal secretions	1	5	6	1	13	14	48	28	76	50	46	96
II. Diseases of the blood				1	1		2	4	6	2	5	7
III. Chronic intoxications (poisonings) and infections.....	11	13	24	8	23	31	162	465	627	181	501	682
IV. Tuberculosis	55	31	86	120	114	234	210	224	434	385	369	754
V. Malignant tumours..	4		4	5	2	7	32	43	75	41	45	86
VI. Mental diseases and neurosis.....	37	38	75	33	46	79	127	138	265	197	222	419
VII. Diseases of the brain, spinal cord and peripheral nerves	23	8	31	39	25	64	337	275	612	399	308	707
VIII. Heart and vascular diseases	12	13	25	9	14	23	129	163	292	150	190	340
IX. Pulmonary diseases (Tuberculosis excepted).....	17	9	26	14	7	21	113	70	183	144	86	230
X. Urinary and venereal diseases (excepting tuberculosis)	8	6	14	2	6	8	25	25	50	35	37	72
XI. Diseases of digestive organs	14	22	36	8	13	21	14	21	35	36	56	92
XII. Diseases of the organs of the senses ...	17	7	24	11	8	19	165	195	360	193	210	403
XIII. Skin diseases	6	3	9	3	1	4	4	10	14	13	14	27
XIV. Complaints caused by accidents	110	21	131	20	6	26	48	29	77	178	56	234
XV. Deformities	31	18	49	11	5	16	70	47	117	112	70	182
XVI. Amputations.....	134	33	167	26	14	40	37	23	60	197	70	267
XVII. General debility .	27	30	57	11	33	44	109	196	305	147	259	406
XVIII. Invalidity from other causes	16	9	25	11	12	23	12	18	30	39	39	78
Gross total.....	523	266	789	332	343	675	1,644	1,974	3,618	2,499	2,583	5,082

As the summaries given here only represent the first working year of the Tribunal it is at the present juncture impossible to come to any approximately correct conclusions as to future developments.

The Invalidity Insurance Fund, too, has important tasks to perform in relation to the state of health of the insured person ; the principal provision in paragraph 20 of the Act runs as follows :

“ Every insured person is — on the assumption that a threatening invalidity can be prevented or that invalidity already set in can be removed or reduced below the limit given in paragraph 3 — bound, if demanded by the board of the Invalidity Insurance Fund, to submit to the treatment and nursing considered necessary ; the individual in question is, however, not bound to submit to any operation that might endanger his (her) life.

“ The Board of the Fund, if necessary, is justified in demanding that the insured persons agree to be admitted to hospital or to other places for treatment (*cf.*, however, § 23.) ”

By the wording of the provision, it will be noted that the authority of the Fund applies to all coming within the scope of the insurance, consequently not only annuitants. Thus, the Fund may on this point exert its authority both before and after the decisions of the Tribunal. Extreme importance must be attached to this authority, not only in respect to the possibility of saving the Fund expenditure in the disbursement of annuities, but also in respect to the insured persons, who by means of these measures can, in time, be prevented from becoming invalids, within the meaning of the Act, or from remaining as such.

As a compulsory measure to be used in giving effect to the aforesaid provisions in paragraph 20, paragraph 23 grants the Fund powers to decree that failure to comply with the conditions as laid down in paragraph 20 may involve a total or partial annulment of the annuity, not, however, before the insured person has been warned against the results of such an omission by registered letter.

Here, again, we meet with the Invalidity Insurance Tribunal as a court of appeal. That paragraph 23 (last section) provides that the decisions arrived at by the Fund, in accordance with paragraphs 20 and 23, can, by the insured person, be brought before the Tribunal, the decision of which is final.

In contrast to the provision in paragraph 18, where the question has to be placed before the Tribunal, the competence of the Tribunal in the present case is dependent upon the insured person complaining about the decision of the Fund and bringing the case before the Tribunal. Therefore, it is here a question of actual appeal, in that the competence of the Tribunal in this case embraces both the formal as also the actual sides of the case.

Of cases of this description only one has been given publicity : see *Social Forsorg* (Social Welfare), XIXth Year, No. 11, page 252 *et seq.* From the passage quoted the following extract is given :

“ The case under review concerned a man, aged 39, farmer and travelling photographer, who, at the age of 22, had contracted an inflammation in the left knee-joint with continuous grating and frequent attacks of pain and synovitis that disappeared after periods of rest in bed ; but it reappeared when he attempted to walk. He had been treated several times at the hospital — without attaining permanent recovery — but had refused to submit to a resection of the knee. The Tribunal, in February 1922, decided on temporary invalidity, at the same time bringing to the notice of the Fund that he should undergo the necessary treatment (operation).

“ Therefore the Fund demanded that he should submit to resection, and as he refused, the annuity was annulled. The insured person then brought these two decisions before the Tribunal.

“ The finding of the court was that the insured person was not justified in refusing said operation, and the decision of the Fund as regards the annuity of the annuity was affirmed

“ Of the points of view that were conclusive with the Tribunal in the case under review, it must primarily be mentioned that the wording of paragraph 20 cannot be supposed to exclude all operations, as it would otherwise be senseless ; but that it referred to operations which, apart from the theoretical possibility of danger constantly attendant, might be said, in the circumstances under review, to be practically without danger to the life or health of the individual in question. Secondly, that the Tribunal cannot rest satisfied with the opinion that an operation of such-and-such a description will in all probability not be “ dangerous ”, but must investigate the individual circumstances of the insured person, to be convinced that, in the case under review, there are no special features, *e.g.*, weak heart, general debility, etc., that might be said to jeopardise the prospects of a successful issue.

“ Moreover, regard must be paid as to the selected operator's skill and personal view of the case, and, finally, the Tribunal must deliberate as to the effect of the operation on the health of the insured person. In the present case, the refusal of the insured person was, in the main, based upon the fact that he considered that he would walk worse with a stiff leg and therefore did not believe in the beneficial effects of an operation. The Tribunal, however, was of the opinion that, in the present case, it had to attach more importance to the opinions of a number of specialists who unanimously advocated operation in the aforesaid case.”

Finally, attention must be drawn to the provision in § 24 of the Act, according to which the Fund is authorised to disburse money for the maintenance of bandages, artificial limbs and other aids that may serve to lessen the invalidity of annuitants, and, according to circumstances, for new acquisition of such aids, nursing (that may be regarded as lessening the invalidity), and for the training of annuitants in various occupations. As will be noted, this provision embraces only persons who are in receipt of the annuity.

WORKMEN'S COMPENSATION IN DENMARK

BY GUSTAV PHILIPSEN,

President of the Workmen's Insurance Board.

I. INTRODUCTION.

After protracted public discussion in literature, Government committees and Parliament, the question of compensation to workmen for injuries received while in employment found a provisional solution through the Act of January 7th, 1898.

Promoted by a private Member of Parliament, *M. Ludvig Bramsen*, a leading authority of the insurance world, this Act was not intended as a National Insurance Act but rather as an Act to extend and define the responsibility of employers in some dangerous trades. This character of the Act was reflected in many of its provisions, principally in the following :

1. The Act only dealt with such branches of industry as were presumed to be " dangerous trades " and which were enumerated in the Act. Among these may be mentioned :

All industries employing machinery of certain descriptions, all factories subject to inspection, the building trades, the construction of railways, streets, sewers, etc., the operation of railways and trams, diving and salvage work, the working of windmills and watermills, etc.

2. No State insurance fund was established, and insurance was not made compulsory, but the personal risk of the employer might be transferred to a private insurance company authorised by the Government after due investigation.

3. Whereas no compensation could be claimed in case of wilful exposure to risks and of gross negligence on the part of the worker, the latter, on the other hand, retained his right to bring an action for damages against the employer or any other person guilty of carelessness resulting in an accident, if he so preferred.

4. The compensation provided for by the Act was small and not intended to cover the whole injury inflicted on the workman. There were two kinds of compensation :

A. *In case of injuries not resulting in death.*

(a) In case of permanent injury, a lump sum was paid. This sum was fixed at six times the annual wages of the workman multiplied by the percentage by which his working capacity was reduced by the injuries

received. But the maximum amount of annual wages taken into account was 800 Danish kroner, the Danish krone at par being equal to about 1s. 1d., whereas the average wages of skilled workmen were already at the time considerably higher. The maximum compensation for injury was thus 4,800 kroner, while the minimum amount was 1,800 kroner.

(b) Compensation for loss of daily wages caused by accident was computed at three-fifths of the daily wages in case of total incapacity, the maximum amount being 2 kroner and the minimum 1 krone. But this cash benefit was not paid till the fourteenth week after the accident and stopped when permanent incapacity was proved or the case had otherwise been finally settled. In no case was the payment of compensation in this form continued for more than a year after the accident.

B. *In case of death caused by the injuries received.*

In this case, the compensation was four times the annual wages computed as above, the maximum being thus 3,200 kroner and the minimum 1,800 kroner. The compensation was payable to the widow, or, in default of a widow, to the legitimate children, or, if no such persons existed, to any other persons exclusively supported by the deceased.

As to the clauses providing for the administration of the Act — the most valuable part of this statute — some information will be given below in connection with the summary of the Act now in force.

II.

The Act of 1898 could only be considered as a first instalment.

In the following years, several attempts were made to extend the scope of the Act, which, so far, only applied to industrial workers.

In 1900, a Compensation Act for the fishing trade was passed. The Act had to take into consideration the peculiarities of this trade, where employer and employed are more often than not the same person.

In 1905, a Compensation Act for the merchant shipping trade was passed. In this Act, the principle of compulsory insurance was introduced into Danish legislation for the first time, practically all vessels subject to the Act being insured with a reciprocal society formed by all the shipowners that came within the scope of the Act.

Finally, in 1908, the compensation system was extended to agriculture, all estates above a certain amount of rating value being subject to compulsory insurance, whereas a system of voluntary State-subsidised insurance for small-holders and their wives was introduced. It is obvious that, by this Act, at any rate, the principle of "dangerous trades" was abandoned.

As the provisions of these Acts were in many particulars mutually contradictory and in conflict with the provisions of the original Act of 1898, and as, furthermore, the

had been amended by subsequent additional Acts, Danish legislation about compensation for injuries had gradually been reduced to chaos. The consolidation of the whole existing legislation was therefore under consideration as early as 1910, but till 1916 did the Government succeed in carrying the new Act promulgated on the 16th of that year. This Act is still the most important piece of legislation governing the question of workmen's compensation, though it has subsequently been amended on some minor points: namely, as regards the amounts payable as compensation, the cost of living during and after the Great War having necessitated some alterations. The following, a summary will be given of the Act of 1916 as subsequently amended.

III.

1. All persons engaged in any kind of work, whether salaried or not, come within the scope of the Act, with the exception of persons incidentally engaged in minor household work for a very short time. Thus, not only all industrial workers, agricultural labourers and persons engaged in the shipping and fishing trades are entitled to compensation but also clerical workers and messengers, domestic servants, etc. Only countries in which equally comprehensive schemes are in force are England and Sweden.

2. All employers have to cover their legal risks by reinsurance with an insurance company (in the fishing trade this also applies to the fishermen themselves). Exceptions are made for the State, for the municipalities and similar public bodies, and in a few exceptional cases in which the Government (see below, Section IV) has exempted an employer from this obligation, a privilege granted almost exclusively to bodies of a non-public character and to certain religious orders.

No official insurance institution with a Government monopoly exists, as is the case in Norway and Switzerland. In the shipping and fishing trade, insurance with reciprocal societies of all employers or participants in the trade is, as mentioned above, compulsory. Otherwise the employers are at liberty to insure with any of the insurance companies authorised by the Danish Home Office. Of these there are about thirty, most of them being joint-stock companies and some reciprocal societies. They are subject to a rather close supervision on the part of the Government authorities.

If any employer infringes the law by neglecting his obligation to insure, he is, in the first place, fined for the offence, and, in the second, made personally responsible for the consequences of any accident that may arise. In case of insolvency, the Government advances the sums due according to the law, the amount being guaranteed by the insurance companies jointly. Compensation for accidents caused by attempts to take human life are always guaranteed by the Government in the last resort.

Small tradesmen and artisans and small farmers may insure themselves and their families (voluntarily), the Government assisting them in paying the premiums. A large number of agriculturists have availed themselves of this provision, while very little has been made of it in the towns. Similar provisions are in force in the small shipping and the fishing trade, but, as fishermen are now, in general, subject to compulsory insurance, they do not avail themselves of the provisions to any large extent.

3. *The Benefits of the Law.*

(a) In case of the *death* of an insured person, a sum of 200 kroner is paid for funeral expenses. Furthermore, in accordance with the lump-sum compensation system at present prevailing, a lump sum is paid once for all to persons suffering primary loss from the death of the person in question. This sum is fixed at five times the annual earnings of the deceased, the maximum earnings taken into account at the calculation being, however, limited to 2,400 kroner. The maximum compensation in case of death is thus 12,000 kroner. The minimum for persons under 60 years of age is five times 1,200 kroner, or 6,000 kroner. For persons above that age, the minimum may be reduced in proportion to their earning power, or an annuity may be substituted in accordance with very detailed rules.

Persons entitled to this compensation are, in the first instance, the widow of the deceased if she has resided with him. The Government may, however, allow part of the amount to be paid to his children, whether born in wedlock or not. At the death of a woman worker her husband is entitled to the whole compensation if her work has been of real economical importance for the support of the family.

If there is no surviving widow, the legitimate children of the deceased under 18 years, or all the children exclusively supported by him, receive the compensation. In case of an unmarried woman, the compensation is paid to her illegitimate children under age.

If the deceased leaves behind neither widow nor legitimate children, the whole or part of the amount may be granted to persons exclusively or partly dependent on him, such as his parent or illegitimate children, etc.

(b) In the case of total or partial *incapacity* not resulting in death, the Danish system draws a sharp distinction between the compensation paid to the injured person before the final decision of the case and the compensation paid in pursuance of the final decision.

(c) Before a final decision has been arrived at, the compensation takes the form of the daily payment of a sum computed at two-thirds of the actual earnings of the injured person before the accident, the maximum being 6 kroner per day, and the minimum for adults $2\frac{2}{3}$ kroner. For persons under 18 or over 60 years of age, the compensation benefit may be calculated at a smaller amount than the ordinary minimum, their actual wages being taken into account; but the amount must not be less than 1 krone per day.

Nevertheless, it must be observed, as has been mentioned above, that, as was the case with the Act of 1898, this cash benefit cannot be drawn till the fourteenth week after the accident. As is the case in Germany, the reason for this very long waiting period is that friendly societies (sick clubs) are supposed to assist the injured person during the first thirteen weeks. Contrary to what is the case in Germany, insurance against disease is not compulsory in Denmark. Nevertheless, the difference is not so great as might be supposed: voluntary State-subsidised insurance prevails to such an extent in Denmark that about 70 per cent of the injured persons have proved to be members of authorised sick clubs, a considerable proportion of the remainder being public officials or persons otherwise provided for by the terms of their employment in case of sickness.

Nevertheless, it cannot be denied that such a state of things constitutes a very weak spot in the insurance system.

The cash benefit is practically the sole compensation for temporary incapacity. Medical treatment does not generally come within the benefits of the Act. Injured persons are, however, entitled to get bandages, artificial limbs, and spectacles from the insurance companies and may, if members of a recognised sick club, also obtain such specialist treatment as is not paid for by the club, such as, for instance, massage treatment of the eyes and ears, etc. Moreover, assistance granted to injured persons by the Poor-Law authorities does not involve the personal disabilities otherwise entailed by poor-relief.

The final award is not given till it can be established to what extent the injured person is permanently incapacitated. As a rule, however, not more than a year is allowed to elapse. But the authority with which the final decision rests may either postpone the decision until six months after the accident (if, for instance, the injured person is still under medical treatment in a hospital), the cash benefit being continued until the decision can be arrived at, or it may give a provisional award, the final settlement being postponed for not more than two years after the provisional decision. This procedure is often followed in the case of injuries of the eye, cerebral or spinal-cord lesions, and festering wounds, but in this case the cash benefit is only continued till the final award has been made.

The amount of compensation is arrived at by multiplying the annual earnings of the injured person according to principles similar to those followed in the case of death compensation. For minor incapacities (5 to 15 per cent), the multiplicator is 5, increasing up to 10, by a rather ingenious system, so that, in case of total incapacity or a maximum of earning power, the compensation may reach a sum of 24,000 kroner.

To ascertain the degree of incapacity is no easy matter. In theory, the calculation is to be based not on the anatomical injury but on the degree to which the latter affects the working capacity of the injured person in the specific trade in which he was employed. It is possible to do so with a system of pensions subject to frequent revision as in Germany. Even there it has, however, been found useful to establish some general rules from the many cases under observation. Thus, *e.g.*, general rules have been established as regards the compensation payable for the loss or stiffness of fingers, amputation of a leg, injuries to the eyes, and many other cases — rules which are generally followed by the highest State authority (in Germany, the *Reichsversicherungsamt*) and which are, of course, observed by the subordinate ones. In Denmark, with its system of lump-sum compensation, such individual treatment of the cases would be practically impossible and would lead to quite arbitrary decisions. In principle, the Danish authorities accordingly follow certain general rules as regards the compensation which can be claimed for the most-frequently occurring injuries, each case being taken to correspond to a certain percentage of total incapacity. These rules are from time to time revised in accordance with the practical experience of the authorities. Furthermore, the authorities reserve to themselves the right to make exceptions from the rules, especially when the accident has caused the loss of specific faculties of great importance to the injured person. This tendency is favoured by the law itself. Without going into details, it may be mentioned that investigations undertaken by the Board have shown that lesions of the legs are generally of graver consequence than those of the arms, that fingers remaining stiff in an unfavourable position

may be more injurious than the loss of the same fingers, that lesions to one eye a very little economic importance, etc.

The compensation awarded at the final settlement consists, according to the terms of the award, in such-and-such a sum in kroner. But very often the amount is actually paid in cash. The same applies to death compensation. The State authorities are entitled to take steps to prevent the compensation from being squandered. Thus, when the recipient is under age, the sum is placed in Chancery, where it can be taken out till the recipient is of age. In certain other cases, the Government authorities may also take steps to secure the sum, *e.g.*, by paying the sum in monthly instalments to the injured person or his widow, by converting the sum into an annuity by purchasing a small agricultural holding for the amount, or by employing it to set up the injured person in business. When prudently administered, the Danish system combines some of the advantages of the pensions system with those of the lump-sum system.

Effect of Nationality. — In case of incapacity, there is no discrimination between Danish subjects and foreigners injured while employed in trades coming within the scope of the Act. In case of death caused by accident, a different principle applies. In that case, the relatives of the deceased are only entitled to the compensation if they are Danish subjects or domiciled in Denmark. The Government is nevertheless authorised to conclude treaties with foreign Powers by which this exception to the general law may be eliminated. Such treaties have been made with Norway, Sweden and Finland and are expected to be concluded in the near future with Great Britain. Other treaties are under preparation.

4. As already mentioned, all persons engaged to work are in principle protected by the Act. Generally, this rule does not involve any difficulties. But there are a few cases in which it may be hard to say if the injured person has been really "engaged to work". Some of the principal questions may be touched upon here.

In the first place, there is the question whether the injured person is really a workman under the control of an employer or an independent person having by contract undertaken to perform, at his own risk, certain work. Thus the practice has been arrived at in Denmark, not without some heartburning, that a charwoman or laundress going out on work in different households is to be considered as employed in all these households, whereas the contrary has been held as regards a teacher of languages or music, even if he gives lessons in the houses of his pupils. The social standing of these persons has been the decisive factor.

Furthermore, the principle has been established that persons working in subsidised workshops (and sweating establishments) should receive the same treatment as workers in the main business, but of course these subsidiary establishments may attain only a degree of independence that this view can no longer be maintained. In the case of seamstresses, the distinction between employment and independent work is drawn according to similar principles. Commercial travellers and insurance agents are usually considered as being in employment, but in some cases where they are completely at liberty to do business or not according to their own discretion, and where the agency is only an insignificant part of their principal occupation (as traders, solicitors, etc.), the case may be decided otherwise.

Persons working exclusively for their own education — such as students of agricultural colleges and technical schools — are not protected by this Act. Furthermore, persons under the obligation to work, without being in employment in the ordinary sense of the term, such as conscript soldiers, inmates of workhouses, and prisoners sentenced to hard labour, do not come within the Act. There may be ample grounds for a claim for compensation in such cases, but the claims would have to be decided by other statutes than the Workmen's Compensation Act.

These cases are only given as examples : it would be impossible to make provision for every contingency of modern life within the four corners of an Act of Parliament.

5. As a general rule, the Workmen's Compensation Act applies only to accidents occurring in Denmark. There are only two notable exceptions. In the first place, a Danish ship is always considered Danish territory, even on the high seas or in a foreign port, and accidents to the crew are governed by Danish law. Secondly, it is maintained, though there is still some doubt as to the truth of the theory, that Danish workmen temporarily employed in a foreign country by a firm domiciled in Denmark come within the scope of the Danish Act.

6. The Act provides against " accidents arising out of the employment and the conditions under which the work is performed ". In addition, it applies to " accidents arising out of attempts — whether on the working place or no — to save human life and to prevent accidents or the loss of valuable objects of art-treasures, etc., if such attempts are made in connection with the employment in question ".

In principle, the employment is looked upon as being in connection with a place of work, and the protection afforded to working men by Danish law is limited to work carried on at the working place. It is no real exception to this rule when, for instance, a messenger boy or a rent collector has a claim for damages in case of accidents befalling him while on business in town for his employer. His working place is precisely the streets of the town and the staircases of the houses visited. The same applies to a skilled mechanic executing a piece of work away from the workshop, even if he is sent out to mount a machine in the provinces, and to lamplighters, street surveyors, and messengers, whose working place is the streets or the roads. On the other hand, Danish law does not as yet protect workmen and clerks on their way to or from their homes to work in their workshops or offices. The shipping trade may perhaps be considered an exception to this rule in so far as the act of leaving or boarding a ship is considered as presenting the same risks as other actions connected with this trade and are therefore covered by the Act.

In extending the principle of the working place to agriculture, the principle has undergone a remarkable expansion, the whole area of a landed property being looked upon as the working place. This has resulted in some rather illogical consequences.

Ordinarily, all accidents occurring in the working place are *prima facie* considered as coming within the scope of the Act. There are, however, some exceptions. Accidents totally unconnected with the actual duties of the worker are not covered by the Act ; for instance when a workman taking his meal in the workshop injures himself by swallowing a fishbone, or cutting his fingers on a broken bottle when drinking, cannot claim compensation. Even the very comprehensive system of agricultural

insurance does not cover accidents arising out of the workman mending his clothes or shoes.

That accidents caused intentionally by the injured person are not covered by law is recognised by all Compensation Acts of the world. In Denmark, compensation may be reduced or totally refused in case of accidents arising out of gross negligence of intoxication, or of not complying with rules prescribed by the employer. This provision has been very little used and is principally meant as a threat. Practically the only case in which it has been used is that of an adult workman playing with machinery or fighting his fellow-workmen.

7. An "accident", as understood by the Compensation Act, was originally a sudden occurrence causing an injury. In most cases the connection between the occurrence and the injury are evident. The difficulty will be in ascertaining the accident. The latter is very often, correctly or not, constructed out of the ensuing injury. The cause of the injury is a question of evidence or probability, where long experience is required to lay down rules neither too strict to the trustworthy nor too lenient to the prevaricator. Even if the accident is proved, however, the question remains whether the injury which has been ascertained is caused by the accident. Consumption, cancer or hernia are cases in point.

In some modern Acts it has been acknowledged that the principle of sudden occurrence is too narrow a criterion for deciding which cases ought to be compensated. In some countries, the so-called "professional diseases" have been taken into account wholly or in part. This is the case in France, Great Britain and Switzerland. Denmark has not proceeded so far. But the Act of 1916 provides that conditions detrimental to health shall have the same legal effect as sudden occurrence if lasting for a few days only. The effects of bad weather, frost, heat and rain, and of one-sided efforts affecting a certain system of muscles or sinews, eczema caused by very hot cold water, and other injuries caused by the cumulative effect of minor causes may be brought within the scope of the law. So far, attempts to extend the provisions of the Act to cover professional diseases beyond this have, however, been unsuccessful. On the other hand, the Government has agreed to consider infectious diseases contracted by nurses and doctors during the discharge of their duties as "accidents" in the sense of the Act, a step which must be characterised as a new departure.

III.

While the principal operative clauses of the Act of 1898 were tentative and imperfect, and have been overridden by more recent legislation, the administrative system set up by the Act has proved a success and has, in the main, been retained till the present day.

As has been pointed out above, this Act did not create any general system of national insurance, nor did it set up employers' organisations like the German *Berufsgenossenschaften*. On the other hand, it did not leave recovery of damages to be decided by the ordinary Courts of Justice like any other private issue between employer and employee. It created a special body, with authority to decide all questions arising out of the Act. This body is called the Workmen's Insurance Board (*Arbejdsretssikringsraad*). The Board consists of four divisions: an industrial division (the general

e), an agricultural division, a division for the shipping trade, and a division for the fishing trade, a state of things which has grown up as a natural consequence of the historical development of insurance. Each division consists of a President (the same for all the divisions), a lawyer nominated by the King; two other members also nominated by the King, of which one must be a medical man, and the other a person experienced in social work; two representatives of the employers and two representatives of the workmen, nominated by the Home Office on the recommendation of the trades organisations. When dealing with cases relating to the fishing trade or injuries caused intentionally, the personnel of the Board is subject to some unimportant alterations. A fifth division was added in 1920. This division acts as a court of appeal in questions arising out of accidents that have occurred in North Slesvig while that province belonged to Germany. It is constituted like the other divisions.

In most cases, the final decision lies with the Board, but in some important matters, especially questions of law, an appeal lies with the Home Office. In some very rare cases, a final appeal lies with the Courts of Justice. So far, this right of appeal has, however, almost never been used.

In this Board, Denmark has a practical authority for settling promptly, impartially and gratuitously the thousands of cases coming up each year. The practical experience acquired by deciding so many cases of the same kind, many of them presenting great difficulties from a medical point of view, has gained for the institution a reputation due, perhaps, more to its organisation than to its staff.

Beside the work performed in the two or three weekly sittings, the Board has considerable administrative duties, consisting in the preparation of cases for the sittings and in the investigation of questions of a medical or legal character.

A staff of surgeons and nerve specialists assist the Board; in about one-third of the cases settled at the sittings the injured have been examined personally by the medical staff. Furthermore, the Board has a certain amount of work to do in supervising the insurance companies and in making arrangements for the investment of compensations (see above).

As will appear from the table printed below, the expenses of the Board are not considerable, *viz.*, about £18,300, but it must be kept in mind that this is not by any means the total cost of insurance. To that sum must be added the profits made by the insurance companies. In Denmark, as in England, the total amount of premiums paid by the employers is out of all proportion to the sums disbursed by the insurance companies.

There has been some improvement during recent years, but it still seems that the prevailing discontent with the height of the premiums may lead to some other scheme being adopted.

IV.

In conclusion, some statistics showing the growth of the Danish system of workmen's compensation may not be out of place.

In 1899, the first working year of the Board, the number of accidents notified was 906. In 243 of these cases compensation was awarded, the total compensation in cases of death being 88,000 kroner, while the total compensation in cases of incapacity was 174,000 kroner.

In 1922, the number of new accidents notified to the Board was 11,800
 Cases not settled in 1921 4,800

A total of 16,600

Of these were dismissed summarily, as being outside the scope
 of the law 1,200
 Dismissed summarily as not entailing permanent incapacity 6,439
 Settled at the sittings 3,313 10,950

To be carried forward, about 5,100

Besides, about 300 cases in which provisional awards were given in 1920 were settled finally.

In 1922, the Slesvig division decided about 200 appeals. As some of these cases arose out of accidents more than thirty years old and had been subject to frequent revisions, the business of this division is more difficult than appears from the number of cases dealt with.

The following amount has been paid as compensation in 1922 :

	Kroner.
In cases of death : about	1,643,00
In cases of incapacity	4,355,00
	5,998,00

In pursuance of final awards in reserved cases 220,00

So that the total amount of compensation paid in 1922 was 6,218,00

or about £350,00

This does not include the day pays, which are supervised but not paid through the Board.

The expenditure of the Board in the financial year 1900-1901 was 22,600 krone and, in the financial year 1922-1923, 329,300 kroner.

THE CARE OF THE INSANE IN DENMARK.

BY EINAR BRUNNICHE, M.D.,

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to the National Board of Health.*

In 1816, real treatment of the insane began in Denmark ; treatment which was placed under expert medical direction. Naturally, from older times there were to be found in this country, as in all other countries, a number of so-called madhouses, but they were, on the whole, very primitive and the medical supervision of the inmates was not very satisfactory. All were municipally owned in that every municipality or country provided for its own insane just as it provided for its poor. Any thoughts of a mutual State arrangement regarding the affairs concerning treatment of insane over the whole country had not then arisen.

The most important of these madhouses, St. Hans Hospital, under the Municipality of Copenhagen, had its premises in the "Ladegaard" (originally a farm belonging to an estate, later a workhouse), situated just outside the ramparts of this city, but, in 1577, when the British besieged and bombarded Copenhagen, it happened to lie in the line of fire and was damaged so that the patients had to be taken away. Thereafter it was decided to remove St. Hans Hospital to "Bistrupgaard" (an estate near Roskilde 30 kilometres from Copenhagen), belonging to the Municipality of Copenhagen. The place was reconstructed and in 1816 placed under a head physician trained in psychiatry.

The capital took the lead, and later, by great and radical extensions and improvements, steadily kept in view the necessity of possessing sufficient room for the rapid increasing in hospital of all the insane of the city and by which the present large hospital complex of St. Hans Hospital has gradually developed under the independent administration of the Municipality of Copenhagen. A great number of years passed before the task was taken in hand of building hospitals for the insane living outside the radius of Copenhagen.

The first of these was opened at Aarhus in Jutland in 1852, the other at Vordingborg (Oringe) in Zealand in 1857. Both were constructed alike and were only curative establishments, so that the incurable were gradually weeded out and handed over to private or municipal care ; however, both hospitals were designed so that, later, they could be extended to house also the incurable. The cost of the erection of these two hospitals was met for the time being by the Treasury, but, for the rest, the provinces were assessed. The main idea of the construction of the hospital in Zealand was to place the whole of the affairs concerning treatment of the insane directly under the control of the State, but the idea was abortive owing to the fact that it could not be demanded of Copenhagen, which already possessed St. Hans Hospital, that it should provide for

its own insane and at the same time contribute funds to the lunacy affairs of the State. In 1877, a hospital, originally intended only for incurables, was opened at Viborg in Jutland and, gradually, most of the old madhouses ceased to exist.

It was only after the passing of the Act dated May 7th, 1884, concerning the erection of a hospital for the insane on the Island of Fyn (Denmark), that the treatment of insane outside the radius of Copenhagen was undertaken by the State. It was at the same time resolved that this hospital, together with those of Aarhus, Vedingborg, and Viborg, should in future be State concerns. Whilst the asylums were formerly erected and administered at the expense of the respective provinces, the cost of construction as well as the deficit in working expenses, was henceforth furnished by the Treasury. It was further decided that as soon as the State took over the management of the hospitals, the Treasury should grant to the township of Copenhagen towards the management of its Lunacy Department a yearly subsidy corresponding proportionally to the amount granted for the treatment of insane outside Copenhagen.

When the Fyn hospital was opened at Middelfart on November 3rd, 1885, joint regulations were issued for all mental hospitals belonging to the State, containing the apportioning of territory to the various asylums, together with a number of administrative, economical and medical regulations.

No law concerning the insane or settling the legal status of an imbecile exists in Denmark.

Like the Health Department, the Lunacy Department acknowledges the Ministry of Justice as the supreme authority¹.

Whilst the State mental hospitals formerly came directly under the Ministry of Justice, the Central Administration of the State Asylums, through the Act passed on May 6th, 1921, regarding the chief management of State mental hospitals, etc. has established a

Directorate of State Mental Hospitals

which has its office in Copenhagen.

Under the Ministry of Justice, the Director has the chief management of all State mental hospitals and, in an administrative respect, is the superior of all employed in the hospitals. He deals with all administrative or economic matters, provided that the settlement is not — according to the rules always in force — left to the local directorate of the asylums.

The Director deals with the estimates and accounts of the hospitals, considers alterations or extensions within the institutions concerned, and makes a report to the Minister of Justice. He must, within a reasonable time every year, on the basis of the proposals and accounts received from the asylums, make suggestions for the part of the budget which deals with lunatic asylums for the coming financial year and also the necessary contribution to the State accounts, as far as the mental hospitals are concerned, for the last financial year.

Further, the Director has to see that laws, regulations and instructions relative to the economy and administration of the asylums are strictly complied with. To this end he has, by frequent visits to the hospitals, to investigate the administrative and

¹ The Lunacy Department has now been transferred to the newly formed Ministry for Social Affairs.

economic conditions. He must see that the purchases, provisions for stores, the products of the gardens, farm, etc., are made in an economical manner. He may himself engage for procuring supplies in larger quantities. The Director, in his own appointed domain, has to make proposals for remedying defects and introducing improvements in the management of the hospitals. If he considers that any of such matters concern the National Board of Health, he should draw the attention of the latter to it.

The Director must lay before the National Board of Health all health questions. These cases may be classified as follows :

I. All cases concerning the cure and attendance (including nourishment) of sick persons and all complaints by the patients about their treatment.

II. Proposals concerning changes in the number of the nursing staff, in their terms of engagement and conditions of service ; all matters touching on the hygienic conditions of the staff, including maintenance, together with all questions of the discharge of members of the staff entitled to pension as a result of illness, and of dismissal owing to misconduct in connection with the nursing of the insane.

III. All matters regarding building, in so far as they concern buildings for patients, sanitary and hygienic buildings. In this category are included dwellings for the staff employed in the hospitals.

IV. The budget estimates of the asylums which deal with the conditions named under the above three headings.

The accommodation in the asylums is controlled through monthly reports to the Director, who, in consultation with the National Board of Health, takes care that the available beds are utilised and makes suggestions for such alterations, extensions, and provisions as the conditions necessitate.

All applications to the Minister of Justice from the State mental hospitals must be made through the Director, who, on receipt of them, makes any observations he considers advisable.

All complaints and grievances regarding conditions in the State mental hospitals, whether concerning the management itself or the conduct of the local authorities or with regard to doctors, patients, or officials, must be submitted to the Director. Should a complaint prove groundless, the Director may dismiss it, but the matter must then be reported by him at the subsequent meeting of the Visiting Committee. Other complaints must be laid by him before the Visiting Committee.

When the Director considers it necessary to institute investigations in one of the State mental hospitals and does not deem himself capable of carrying out the work alone, he may claim from the police the necessary assistance in the investigation.

For the purpose of enquiring into general questions affecting State mental hospitals and dealing with complaints, there was established, by an Act passed May 6th, 1911, a *Visiting Committee (Tilsynsraad)* consisting of the President of the National Board of Health, the Director of State mental hospitals, an official of the Ministry of Justice, together with four members of Parliament. The Visiting Committee holds meetings as often as necessary, and not less than four times a year. The Director reports to the Visiting Committee on the working of the hospitals since the previous meeting. Superfluous he presents an annual report. A record is kept of the proceedings. Every member has a right to demand that his views expressed during the

proceedings are included in the minutes, and the Committee can claim that a copy of the minutes be enclosed with the Director's report to the Minister of Justice.

The medical superintendence of the treatment of the insane is exercised by the *National Board of Health (Sundhedsslyrelsen)*, one of whose members is the adviser in affairs affecting the treatment of the insane. The adviser alone, or in conjunction with the President or Vice-President of the National Board of Health, exercises the supreme supervision — as far as matters concerning nursing and attendance are concerned — of all official and private hospitals and asylums in which insane, mentally defective, epileptics, or persons suffering from kindred complaints are treated, nursed or kept under observation.

The adviser must, by personal observation, obtain exact knowledge of the various conditions under which the sick are treated all over the country; it is his duty to draw the attention of the National Board of Health to all infringements of laws and regulations, malpractices or defects which have come to his knowledge and to consider and put forward suggestions for remedying them. He is obliged to render assistance in working out plans for new mental hospitals and in legislative work affecting the treatment of the mentally abnormal.

For the purpose of furnishing to Courts of Law and other authorities such legal declarations as are required for settling the legal status of individual persons, a *Legal Medical Council (Retslægeraad)* was established by an Act passed April 30th, 1900, regarding the central administration of health affairs under the Ministry of Justice.

This Council consists of three members appointed by the Crown for a period of ten years, and they must have expert knowledge in legal medicine, psychiatry and obstetrics. On the recommendation of the Legal Medical Council, the Ministry of Justice appoints a number of experts for a period of ten years, from amongst whom one or more are summoned to replace regular members of the Council, when the nature of the case renders it desirable, or when the importance of a case requires that more than three take part in the decision. The legal medical decisions which demand laboratory work and which the Legal Medical Council or the medical advisers to the Courts desire to be undertaken, are referred to the Medical Jurisprudence Institute at the University.

In addition to being called for by the National Board of Health, the Legal Medical Council furnishes such declarations on application by the various departments, the courts, indictment authorities and the superior magistrates. All medical certificates may be submitted for criticism to the Legal Medical Council.

The *Joint Regulations* now in force for State mental hospitals are dated October 1st, 1915, with later additions dated October 14th, 1920, and March 19th, 1923. The Regulations contain a number of rules regarding the management and staffs of the hospitals, the reception and discharge of patients, and economic matters.

Administratively and economically every hospital is governed by a board consisting of the head physician as chairman and two or three members resident in the district concerned, who are appointed by the Ministry of Justice; amongst these there must be, as far as possible, a lawyer and a business man.

The head physician is the deciding factor in all questions concerning the treatment and nursing of patients. He must not practise as a general practitioner outside the sphere of the hospital, neither must he receive any mental patients for private treatment without the consent of the Ministry of Justice.

The daily administration is directed by the superintendent (*Hospitalsforvalteren*) of the hospital, who is appointed by the Ministry of Justice on the recommendation

the directorate. He supervises the buildings and plant of the hospital and sees that they are kept in good repair. He maintains order in the establishment, except in the details. He is subject to the head physician's decisions in all matters of the treatment and the well-being of the patients. He also acts as treasurer and must give security of 500 kroner, and his ready-money cash must at no time exceed this sum.

The country (exclusive of Copenhagen) is divided into six areas, one for each of the six State mental hospitals. The Zealand group of islands, with Bornholm and the Faroe Islands, comprise two areas; Jutland and Fyn the other four. Patients from each area are for preference referred to the hospital of that area. The State mental hospitals receive, preferably, the insane belonging to the Kingdom of Denmark, with the exception of Copenhagen.

The hospitals at Aarhus, Vordingborg and Middelfart have three classes of treatment, while those at Viborg, Nykøbing and Vedsted have only one class corresponding to the other hospitals' third class. First- and second-class patients from the districts where these hospitals have only third-class accommodation are received in hospitals which are able to provide first- and second-class board, *viz.* in Sjælland (Zealand) at Vordingborg Hospital; in Jutland and Fyn, the hospitals at Aarhus and Middelfart. When there is a shortage of accommodation in the hospital of a certain area, or other emergencies arise, the insane from that special district may be received into the other hospitals.

The charge made for first-class accommodation is 10 crowns (kroner) daily, for second-class 5 crowns 50 øre, and for third-class 3 crowns 50 øre. For poorer patients, and for those who are members of the State-recognised sick benefit clubs the charge for the third class is, however, only two crowns per diem. These persons entitled to attendance at a reduced fee are treated and nursed gratuitously for the first three months in hospital, if their removal to a hospital was demanded within two months after the outbreak of the disease and if they were taken in within a week after the request for admission had been granted. However, this favour cannot be granted if the patient has been insane before. The charge made for treatment in a mental hospital is not considered as poor relief even if paid by the responsible municipality. Patients coming from Copenhagen and abroad may be treated, but only in the first and second maintenance classes and as far as room is available, and for payment of, respectively, 16 kroner and 12 kroner daily. These patients are not referred to any particular hospital.

Payment is made quarterly in advance. To ensure payment in due time, such security must be given as the directorate considers adequate, unless the patient is admitted at the expense of public funds. This payment will cover the total expenses for the patients' treatment and maintenance in hospital. Patients in the third class, as a rule, clothed by the hospital, while patients in the first and second class bring their own clothes and keep in repair their own wearing apparel and linen.

If, in the opinion of the head physician, the articles of use and other necessities for the patients can be produced or kept in good condition in the hospitals themselves, this is done on the conditions he himself determines. For the work executed for the hospital by third-class patients (in some circumstances, second-class patients) during their detention, the hospital exchequer grants them a payment; this must, however, be regarded as recompense for the work but as an encouragement to the patients to avail themselves of the means of cure by work most suitable to their

condition. According to the decision of the head physician, a patient's earnings may be spent either on the latter's amusement, on special provisions for his welfare, or may be placed in the bank. When a patient leaves, his earnings may, according to the decision of the head physician, be paid to him or his next-of-kin or invested in a fund for the patient's benefit. When a patient dies in a mental hospital, his earnings are placed to this fund.

With regard to the placing of patients into a mental hospital, the following regulations are in force :

For admission to a mental hospital the following documents must be presented.

1. A written application for admission from those directly concerned (the patient's nearest relatives or guardians), with a notification of the class in which the patient is to be placed.
2. A medical certificate certifying that the patient is suffering from insanity.
3. Medical information regarding the patient.

The medical certificate (Scheme A) must be filled up and signed by a medical practitioner, not employed in the hospital, after examination made not more than four weeks before the reception of the patient in hospital. The certificate must therefore contain information as to when the last examination took place. The medical statement (Scheme B) must contain information by the doctor as to which manifestations of the disease he has himself observed and on which he bases his declaration that the patient is insane ; the statement, with *the questions answered with the strictest accuracy*, is then forwarded by the doctor to the hospital in a sealed envelope. Copies of the two certificates, together with printed instructions of the formalities required, may be obtained at the hospital.

If the patient is not maintained at the public expense, the directorate requires adequate security for payment to be made in due time.

The head physician decides, from the information laid before him, whether the applicants are suitable for admission or not. In specially urgent cases, the head physician can decide that the patient be temporarily accepted before the usual formalities have been complied with. In such cases, a certificate as to the patient's insanity must be procured from a medical practitioner, not employed in the hospital, within three days.

Should the police direct the placing in a mental hospital of a person dangerous to himself or others, he is at once received when the necessary certificate for compulsory placing in hospital is presented. When the co-operation of the police is invoked in the compulsory placing in hospital of an insane person, the medical certificate must express the state : (1) that the patient is suffering from *morbis mentalis*, (2) that he is dangerous to himself or to others, (3) when the doctor attended him.

Patients whose placing in hospital is demanded by a court, or are, according to the resolution of the Ministry of Justice, considered dangerous to the common safety, must be admitted as soon as possible.

If a hospital is unable to receive a patient for whom immediate admission is sought but whose name is on the waiting list, and if, during the waiting period, owing to the patient's cure, admission elsewhere, or death, the admission is found to be no longer necessary, this fact must be notified to the hospital as soon as possible.

Excluded from admission are :

- (1) Those who from birth or early childhood have been mentally deficient, unless they are placed in hospital for acute insanity.
- (2) Those in whom mental derangement may be regarded as a transient or less serious symptom of a bodily disease.
- (3) Insane persons suffering from disease which will clearly soon cause death.
- (4) Insane persons suffering from an acute infectious disease.

Dismissal of convalescents from mental hospitals takes place following the decision of the head physician, and he is responsible that no patient whose convalescent stage is not over is detained in hospital. When circumstances permit, the head physician may dismiss a patient on trial for a period of up to six months. Should the condition of the patient render it necessary during the course of this period, he may again be placed in hospital without the usual formalities.

If a patient has been compulsorily placed in hospital or compulsorily detained because he is dangerous to the common safety, he can be dismissed only with the consent of the police authorities.

In cases of dismissal — including dismissal on trial — of patients who at the direction of the police authorities have been placed in a mental hospital as dangerous to themselves or others, and also when such patients have permission to visit their homes, permission must be given in due time to the police authorities.

A patient may be dismissed by order of the head physician without being cured, if circumstances demand it. The head physician is always justified in detaining for a short time being any patient he considers dangerous to the common safety; however, he must always send communications concerning the detention to the superior magistrates at the patient's place of abode, who will then decide whether the patient shall be discharged or compulsorily detained.

State Expenditure on the Treatment of the Insane.

This expenditure consists in making up the working deficit of the State mental hospitals and in the State subsidy for municipal treatment of the insane.

The State accounts for the financial year 1922-23 show the following :

The working of the State mental hospitals :

Expenditure	6,881,449	kroner
Income	3,434,799	»
	<hr/>	
State subsidy	3,446,649	»

In the same financial year, the State subsidy to municipal mental hospitals was :

Allowance to the City of Copenhagen according to Act of May 7th, 1884	864,263	kroner
To other municipalities	106,889	»
	<hr/>	
Total	971,152	»

The State expenditure on treatment of the insane during the financial year 1922-23 was therefore, in all, 4,417,802 kroner.

Nursing in Mental Hospitals.

By an Act passed May 13th, 1911, concerning the arrangement of nursing conditions in the State mental hospitals, a number of regulations were issued for the improvement of the care of patients in mental hospitals. These regulations laid down that no person could be accepted on the nursing staff who had not acquired a general training in sick-nursing or who had not been practically and theoretically trained in nursing the insane and passed an examination on that subject. The staffs consequently consist of two groups; of nurses who, prior to their appointment, have received a thorough training in general nursing, and of men and women who are accepted as salaried pupils and undergo a year's course of instruction at the hospital, concluding with an examination before they obtain regular engagements as attendants. The higher posts on the nursing staff must be occupied by women who have acquired training in general nursing of the sick as well as in nursing of the insane.

Whilst at first there was a lack of nurses in proportion to the attendants, this proportion has, fortunately, been substantially altered during the years since the passing of the Act. The Act affirmed that the attendants could be replaced by trained nurses provided that the total amount granted by the Finance Act for the payment of the staff of attendants was not exceeded. However, owing to social conditions, the salaries of the attendants gradually increased so considerably that they attained a wage almost equivalent to that of a trained nurse. There would, however, have been great difficulties in obtaining a sufficiently large number of nurses for the mental hospitals if the private nursing organisations had not of their own accord demanded of their members who acted as private nurses six months' supplementary training in nursing of the insane, after completing their training. This entails a frequent change of these "supplementary" nurses in the hospitals; but, together with, and under the direction of the staff of regular nurses, they give satisfaction, as they are not probationers but are well acquainted with hospital work and generally possess a three-years record of service. Moreover, these supplementary nurses constitute good recruiting material for supplying the hospital with regular nurses.

As will be seen from the statements concerning the staff of attendants in the hospitals at Vordingborg and Nykøbing, a system is being gradually adopted by which the nursing in the wards for violent patients and in the male wards is performed partly by the regularly employed nurses and partly by the nurses undergoing a supplementary training. The simpler work is performed by maids.

In the male working departments and workshops male attendants are, of course, indispensable, just as in the most violent male sections, but the workers in these do not work independently but under the leadership of trained nurses. In order to raise the level of the male attendants, endeavours are made to attach the best of them in a more permanent way to the hospital, by allowing them to reside and establish their families in the hospital or in its vicinity.

In St. Hans Hospital, which comes under the administration of the Municipality of Copenhagen, a similar development, with transition to fully qualified nurses as a basis for nursing of insane, has at the same time taken place, which in this case was much easier to carry out, as the Municipality of Copenhagen — in contradistinction to the

te — controls 10 large hospitals, representing all kinds of special treatment, with a staff of well-trained nurses and probationers from whom St. Hans Hospital draws the necessary number of nurses and probationers to satisfy its requirements.

The State Mental Hospitals.

Of the six State mental hospitals, only two will be mentioned ; Vordingborg, because it is a type of an older hospital recently modernised ; and Nykøbing, because it is the newest large hospital, built on the pavilion system. I shall also mention the special form of family nursing at Aarhus hospital.

The Mental Hospital at Aarhus.

Built on a jointly connected system. Opened 1852, extended 1861 and 1888. Accommodation for 614 patients.

Two nursing institutions for chronic patients are connected with the Aarhus hospital :

Raamosegaard, opened in 1903, belongs to the State and can accommodate 70 male patients.

Dalstrup, opened 1904, owned by four local municipalities, receives a State subsidy of 75 kroner per diem. Accommodates 98 male patients.

Raamosegaard and *Dalstrup* are situated about 50 kilometres from Aarhus on the peninsula of Djursland. They are branches of the hospital at Aarhus, inasmuch as they receive exclusively patients removed from it, and these are always regarded as belonging to the mother hospital. The daily supervision is effected by a local practitioner, under the superintendence of the head physician of the hospital, who must personally visit the institutions once a month.

Besides relieving the stress on the wards for chronic patients of Aarhus hospital, *Raamosegaard* and *Dalstrup* play a great part as central institutions for the *family nursing* peculiar to the mother hospital. This nursing takes a special form slightly different from the Scottish form of family nursing, in which the local health committee exercises the supervision, and a medical practitioner under the Central Medical Administration travels round on journeys of inspection. It differs also from the German system, in which family nursing is identified with the mental hospitals whose physicians exercise the whole of the supervision of the patients placed under family nursing. The objection to the last form is that the nursing homes must be only a moderate distance from the hospitals and, therefore, there is only a limited number to choose from, — still more important — that, as the physicians of the mental hospitals cannot be expected to be in direct contact with the surrounding population, it is generally difficult to find a suitable home and to overcome the natural fear of the population to receive lunatics. These difficulties, which resulted in the failure of family nursing

tried by a few other Danish hospitals, are avoided by the special system employed at Aarhus, which consists in the local physicians forming a link between the hospitals and the patients stationed outside. Moving amongst the population the local practitioners are much better able than the hospital physicians to allay the anxiety of the population and to explain how they ought to be handled. Moreover, by this system the use of homes at a much greater distance from the hospital is possible — a very important factor especially when the mental hospital, as in the case of Aarhus, is situated close to a large town in the immediate vicinity of which family nursing is not so suitable. In Djursland it has proved more practical to group family nursing patients round smaller nursing centres so that the physicians who are responsible for their daily supervision may easily supervise most of the patients placed with families. Family nursing at Aarhus is of fairly recent date. It was begun in the year 1910 and has been very successful. Not only are the patients placed under free conditions on the same rural and social status from which they sprang, but it has also been shown that for many the place under more natural conditions of living has effected a substantial improvement in their physical state. No accident bringing discredit on the free placing of mental defectives among the population has yet occurred in the Aarhus family nursing. At the close of the year 1923 there were 183 patients under treatment in Djursland, 104 men and 129 women, and the number is steadily increasing.

The homes sought for the purpose of family nursing must belong to the same social circle as the patients to be placed in them, mainly the artisan and lower peasant class. Patients must be chronic but quiet, cleanly, and capable of doing some work. Two patients are often placed in the same home: one of them a person capable of doing something useful in the house, the other one less so. In every respect the patients are treated as belonging to the family, remain in the same room, take their meals and have the same attendance and maintenance as the members of the family. Patients must not be left to their own devices, must not participate in pleasures by themselves and must not partake of liquor. They may be employed in daily work after an arrangement with the doctor, but they must not be put to dangerous occupations and great care must be observed in seeing that they are not overworked, that they get sufficient rest, and that they are kept clean. No punishment of any kind whatever must be given. The hospital supplies wearing apparel to the patient, the nursing home the bed-clothes. The home washes and keeps in repair all clothing supplied. As far as possible, the nursing home must see that the patients attend at the nursing centres, once a month for the purpose of having a bath and their clothing inspected. When a hospital patient is to be placed out in family nursing he is passed over to the nursing centre in order that the physician there can become acquainted with the patient and thereafter find a home suitable for him. The head physician of the hospital undertakes the medical superintendence and visits every family nursing patient and inspects the nursing home annually. The more frequent inspection falls upon the local physician, who attends to the patients in the homes at least once a month and, in cases of sickness, often as he thinks expedient. In cases of graver bodily disease or aggravations of insanity, the patient may, on the physician's advice, be transferred to the nursing centre or, without further formalities, to the mental hospital to whose list of patients he still belongs. Every quarter the physician submits a brief report to the hospital regarding the condition of the patient and the nursing home. He is paid 15 øre a day (about 55 kroner per annum) for each patient. At the moment nursing homes receive one krone 75 øre per day for each patient.

The Mental Hospital at Vordingborg.

The hospital is situated in the little town of Vordingborg on the peninsula Oringe. The peninsula is 59.5 hectares in extent. Of this, buildings and gardens take up 18 hectares, nursery garden 5.5 hectares, a little wood 7 hectares ; 19 hectares is arable land and 10 hectares pasture-land. The agricultural land was, until 1907, let, but, since that time, has been managed by the hospital itself.

The oldest portion of the hospital was erected in 1857, with accommodation for 100 patients, exclusively for fresh cases of sickness, but, in 1871, it was extended to accommodate 400 patients, acute as well as chronic cases. The oldest part of the hospital, which later underwent some minor extensions, was built on a block system of wings with through corridors. A later extension in 1911 was constructed on another system, as in that year there were erected, besides a detached doctor's residence, two detached pavilions with watch departments. In 1919 a pavilion was erected for the isolation and treatment of consumptive insane, the idea being, as far as practicable, to transfer consumptives from the other mental hospitals.

In 1922-24, the latest important extension was undertaken. Several new buildings have been erected ; several older ones have been reconstructed.

By the reconstruction, room was gained for about 140 beds in the old hospital in addition to the 63 in the recently erected pavilion. By the rebuilding, the accommodation for patients was brought up to 798.

Hand in hand with these alterations and extensions has come a complete reorganization of the nursing system. There were previously two female head attendants employed in the women's department and two male head attendants in the men's department, besides an inspecting night head female attendant, so that the two detached pavilions erected in 1911 were quite without head female attendants and were administered directly by the head physician. Conditions have now altered, so that the whole hospital is divided into three about equally large units, each under the charge of a head female attendant. In addition, there is, as formerly, a night head female attendant. Of the two former male head attendants, one has now been appointed as manager in the workshops.

The staff trained by the hospital itself (male and female nurses) has been reduced in number and, in contrast to what was formerly the case, the nucleus of the staff which tends to the nursing of the patients is formed of fully trained nurses who have had three-years general hospital training. Some of these nurses are permanently employed ; others, after three years' training, take another six-months course in the care of the insane. In each section, including the male wards, there is a head nurse, and, in several sections, as, for instance, in a large surveillance ward for men, in the best surveillance pavilion for restless women and in some others, male and female attendants are no longer employed, but only trained nurses and ward-maids for the simpler work.

The State grant to the hospital for the insane at Vordingborg (the working grant) was, for the financial year of 1922-23 (just when the hospital was in course of reconstruction and extension), 569,025 kroner 86 øre. The daily cost per patient was 12 kroner.

Apart from the head physician, who is chairman, the management consists of five members.

The staff of the hospital comprises :

Permanent medical staff : one head physician, one section physician, two reserve physicians — or four in all.

Nursing staff : four head nurses, one officer (workshop leader), 64 permanent nurses, 35 nurses under supplementary training, 42 male and 50 female attendants — in all, 186, or one for 4.29 patients. It may be observed that there are 103 fully-trained nurses and 82 male and female attendants trained at the hospital itself.

The Mental Hospital at Nykøbing, Zealand.

The hospital was opened in 1915 and is built on the pavilion system. In the centre of the 44-hectare grounds stands the main building at the one end of green, all flanking this, on the one side, the dwellings of the physicians, the kitchen, laundry, engine-house and baths ; on the other side, the church, workshops, meeting room, and dwellings for nurses and attendants.

East of this central group, and distributed over the grounds, were erected the pavilions for women patients ; a surveillance building for restless patients and an open pavilion are one-storey buildings, the others two. West of the central group was erected the pavilions for men ; here, too, is a surveillance building for restless patients and an open pavilion of one storey, the others of two. Apart from these, on the western edge of the grounds, is the confinement institution for criminal insane males, comprising two closed pavilions. In the grounds are the necessary dwellings for the staff, the chapel, fire-engine house, stables, hot-house, etc. The number of patients was calculated at 600 in the hospital itself and 50 in the confinement institution, which was rather more expensive. The cost of building was 2,364,000 kroner, or 3,637 kroner per bed.

The central group of the hospital was planned with a view to later extension, and these were soon made. As early as 1918 a pavilion was erected for chronic restless women patients, with accommodation for 50. The building costs were then 166,000 kroner or 3,320 kroner per bed. In 1923 a large extension was completed, comprising two new pavilions for women, with 64 and 40 beds respectively, and one for men with 64 beds, as well as a building for nurses, etc. The cost of building the three patient pavilions was 950,000 kroner, and had thus risen to 5,655 kroner per bed.

The accommodation is, after the last extensions, 818 patients in the hospital proper, apart from 50 in the confinement section. The State grant to the hospital (working deficit) for the financial year 1922-23 (before the latest extension of the hospital) was 998,586 kroner 74 øre, and the daily cost per patient was 6.38 kroner. The hospital has only one class of patient — the third.

Apart from the head physician, who is chairman, the management consists of two members.

The hospital staff comprises :

Medical staff : one head physician, two sectional physicians, two reserve physicians and two medical students — or seven in all.

Nursing staff in the hospital proper : four head nurses, five section nurses, 51 permanently employed nurses, 38 nurses for supplementary training, 20 male attendants, 35 female attendants, and 25 probationers — in all 173, or one for every 4.73 patients. Of the nursing staff 93 are fully-trained nurses — 80 trained at the hospital itself.

The confinement section has also a nursing staff of one male head attendant and 22 attendants. As the three wards of the confinement section so far taken into use accommodate 37 patients, this is one attendant to every 1.61 patients.

The working expenses of the hospital, as estimated in the budget for 1924-25, are 1,657,095 kroner.

The Confinement Institution

for persons confined for breaches of the law, and considered suitable for admission by the Ministry of Justice, in accordance with a declaration by the National Board of Health.

The Confinement Institution, which is the only criminal asylum in the country, can accommodate 50 criminal and dangerous, physically abnormal men who are placed there indefinitely. They can only be discharged when the Ministry of Justice expressly orders it.

The institution, the object of which is to provide the security of a prison with hospital conditions, consists of two pavilions, each with two sections. One of the sections has not yet been used, as the institution has not accommodated more than 36 patients at a time. All the windows of the patients' quarters are provided with iron gratings, and yards and gardens are enclosed by a five-metre-high wall.

The most strictly watched section for the most dangerous and restless patients has two four-bed wards and five solitary cells.

The patients in this section are only employed on work which does not necessitate the use of dangerous implements, such as closing up bags and envelopes, etc. In the more unrestricted section belonging to the same pavilion there are workshops, for instance, a small tailors' shop. The section is otherwise arranged almost on the same lines as the other, but it is not quite so large, there being only room for 11 patients who, at night, are placed in a four-bed ward, a two-bed ward and five solitary cells; during the day, the patients are, as a rule, in the common vestibule or in the garden.

These sections are in a one-story pavilion; the other pavilion has two stories, and each of these accommodates a section with room for 13 patients who form the less dangerous elements of the institution. In these sections there are, besides the wards with one, two and four beds respectively, a large common room and a workroom, and, on the top floor, there is also a small chapel for the monthly service. In these sections the patients can be employed on various occupations, such as weaving, bookbinding, hat-making and carpentering, as well as gardening. The common garden, covering about three-quarters of a hectare, is used partly for the cultivation of vegetables for the hospital, and there are also some small allotments which the patients who are allowed to do so can use as they like. In the workshops the dangerous tools are placed on wall-brackets, where they are easy to check, and the patients are not allowed out of the locked workroom until it has been ascertained that all the tools are in their places. There is no compulsory labour, but the patients are encouraged to work by small favours and certain privileges which, however, by no means lead to the desired result, as several of the patients simply refuse to do any kind of work.

The supervision of the patients in this institution is exercised by a head attendant with 22 male attendants under him, two of which are on gate watch right through the twenty-four hours, while five do duty as night watchmen. Some of the patients are permitted to be alone in the yard or the garden, but when there are several patients out there must be two attendants present, which is also the rule when a cell patient is to be visited, as well as at night when a patient has to be taken to the lavatory. In the strictest section there is, however, a water-closet in the wards themselves, and it is everywhere the rule that, before being admitted to the wards at night, the patients are clothed completely in the vestibule and only put on their night clothes in the ward itself.

Permission to go out is not given to persons admitted to the confinement institution.

The six State mental hospitals (plus the nursing centres Raamosegaard and Daltrup, but not including the Confinement Institution) have accommodation for a total of 4,170 patients. As the country outside Copenhagen had, according to the census of February 1st, 1921, a population of 2,727,839, this means one bed for every 66 inhabitants.

A Commission was appointed by an Act of May 6th, 1921, to prepare the work for the erection of a new State mental hospital in Jutland.

B. *The Care of the Insane in Copenhagen.*

St. Hans Hospital at Roskilde.

Founded at its present situation in 1816 as a continuation of the institution of the same name just outside Copenhagen, this hospital has been extended by means of numerous new buildings to a good-sized hospital which, with its present accommodation for 1,670 patients, is the largest mental hospital in the Scandinavian countries. The principle of providing accommodation for all insane in the Municipality of Copenhagen is adhered to, so that no one is refused admission owing to lack of room. To make this possible, the great extensions which were made during the last thirty years of the past century were planned on the system of the combined institution, or hospital and a home for incurables, where the line between the curable and the incurable patient was very sharply drawn. During the present century the hospital has been brought up to date by the erection of surveillance sections, removal of the nursing staff to separate buildings, and the acquisition of modern technical plant.

St. Hans' Hospital is now divided into a women's hospital and a men's hospital (*Bjærgmarken*), situated about half a kilometre from each other, under joint administration, but separated as far as medical attendance is concerned; each had its own head physician and other medical staff. The administration of the hospital comes under the Director for the Copenhagen Hospitals, who is subordinate to the Mayor of Copenhagen. A psycho-physiological laboratory is attached to the men's hospital.

The regulations for admission, exclusion and discharge are on the whole similar to those for the State mental hospitals. The greater part of the patients (in 1922, 45 of a total of 462 patients) are admitted from the mental section of the Copenhagen Commune Hospital, which is used as a temporary reception section, where the various formalities are effected.

The fees for patients living in Copenhagen are: first class, 6 kroner per day during the first six months, and then 5 kroner; second class, 3 kroner 50 øre per day for the first six months and then 3 kroner; third class, 1 kroner 20 øre per day. Free treatment is not poor relief, but the patient must be entitled to parish relief in Copenhagen. For patients from other parts of Denmark, the fees for the three classes are 12, 8 and 6 kroner respectively. Patients from abroad are only admitted into classes 1 and 2 and for a payment of 15 and 10 kroner per day respectively.

As the Municipality of Copenhagen had a population of 561,344 inhabitants at the census of February 1st, 1922, St. Hans Hospital has accommodation for 1 in 336 inhabitants.

The accounts for the hospital in the financial year of 1922-23 were :

Expenditure	kr. 3,580,796.57
Receipts	797,938.50
Municipal grant	kr. 2,782,858.07

a daily expenditure of 6.18 kroner per patient.

The Mental Section at the Commune Hospital at Copenhagen (Section Six).

This section is a combined mental and neurological section. The mental pavilion is a two-story building, with a men's section on the ground floor and a women's section on the first floor, each divided into three sub-sections for quiet, half-restless and restless patients. The pavilion is arranged for a normal number of 90 patients, but is almost always over-full. Ever since about 1890, the nursing staff, including that in the men's section, has consisted of fully-trained hospital nurses ; it is only in the restless men's section that there are some male attendants under the superintendence of the nurses to look after the restless patients.

The admission of patients takes place with very few formalities, which is a great advantage in a large town, as all that is required is a certificate from a medical man to the effect that the patient is suffering from *morbus mentalis*. Such patients are always admitted at once. The medical certificate must contain a definite declaration from the doctor that he has personally observed the patient, stating the day on which the examination took place, and a patient must not be admitted if more than fourteen days have elapsed since that examination. Mental cases from outside the town are not admitted. Compulsory admission with the assistance of the police may be obtained on application to the nearest police station. The medical certificate must then state : (1) that the patient suffers from *morbus mentalis*, (2) that he is dangerous to himself or others, (3) the date of the doctor's examination (preferably the same of the foregoing day), (4) and any request from his relatives for his admission.

Apart from patients from the town, the hospital's Section Six also admits — without further formality — any patients who, owing to other disease, have been placed in one of the hospital's other sections and who, during the course of the disease, give evidence of such confused mind or psychical unrest that they have a disturbing effect on the other patients.

The section acts as a reception and sorting section for the insane of Copenhagen, those of the patients whose mental illness seems to be of short duration being retained until they are cured or can be placed elsewhere, whilst those whose mental illness is of longer duration are transferred to St. Hans Hospital. Of the 825 patients discharged from the section in 1922, 438 were transferred to St. Hans Hospital. Application to the proper quarter regarding the admission of a mental case in the Commune Hospital's Section Six is regarded as also covering transfer to St. Hans Hospital on the order of the head physician.

Training in psychology takes place in this section. The head physician is a professor of psychology at the University of Copenhagen and delivers lectures, which are obligatory for one term. A psychological and histological laboratory maintained by the university is attached to the section.

Fees in common wards are 1.20 kroner per day, although sick club patients only pay half, and impecunious patients are treated gratis without this being regarded as poor relief. A private ward costs 12 kroner per day.

The Private Philanthropic Society, Brøen (the "Bridge"),

which was established in 1917 on the initiative of Danish mental physicians, the object of which is :

(1) To help and support insane children of formerly insane people, and especially arrange matters for those who are discharged from the mental hospitals as cured or improved, and thus build a bridge for them from the hospital to life outside, for instance, by procuring work for them in suitable places and by giving them material and moral support.

(2) To help families (if necessary) whose wage-earners have been placed in a mental hospital.

A considerable part of this support is given in the form of help towards clothing and house rent. As a rule, the society gives money to the extent of 200 to 300 kroner to each applicant, and much more in some cases. The relief is paid out according to circumstances in one sum, monthly or weekly. As a general rule, it is possible to help all the applicants who are recommended by the hospital concerned.

Apart from its relief work, the society gives advice and guidance, for instance with regard to remission of poor relief, admission to unemployment or sick clubs or invalidity pension.

In 1921 the society opened a " polyclinic " at the Rigs-hospital in Copenhagen open once a week, when a mental physician and a lawyer are present. Besides giving advice and guidance to former patients and their families, lighter mental cases, which do not require hospital treatment are dealt with.

CARE OF THE MENTALLY DEFICIENT IN DENMARK.

BY PROFESSOR CHRISTIAN KELLER.

The alienist Hübertz in 1855, influenced by the Guggenbühl era in Switzerland, laid the foundations for State care of the mentally deficient in Denmark by the establishment of the asylum known as " Gamle Bakkehus " ; during the course of time, the following institutions have been founded for the purpose :

- (a) Four public asylums with room for 3,450 inmates ;
- (b) Private homes connected with the asylums which can take, in all, 350 patients ;
- (c) Schools in the bigger towns for weak-minded children.

Two of the four asylums are " combined ", i.e., they admit mentally deficient of any age and in any condition and divide them into separate sections :

- (1) Children capable of being educated (school-homes) ;
- (2) Able-bodied adults (work homes) ;
- (3) Men, women and children that require constant attention.

These two asylums are :

(1) The Sealand Asylum (*Gl. Bakkehus — Ebberødgaard*, with branch establishments, opened in 1855). It has room for about 1,500 inmates divided amongst the sections and, in addition to Copenhagen, covers the provinces of Sealand and Lolland alster, i.e., the country east of the Great Belt.

(2) The Keller Asylum, opened in 1865, with accommodation for 1,275 in the main asylum at Brejning, which divided into separate homes, and accommodation for 125 in the two subordinate island institutions for dangerous cases, one on the Island of Ivö, in the Limfjord, and the other on the Island Sprogö, in the Great Belt. In all, there is accommodation therefore for 1,400.

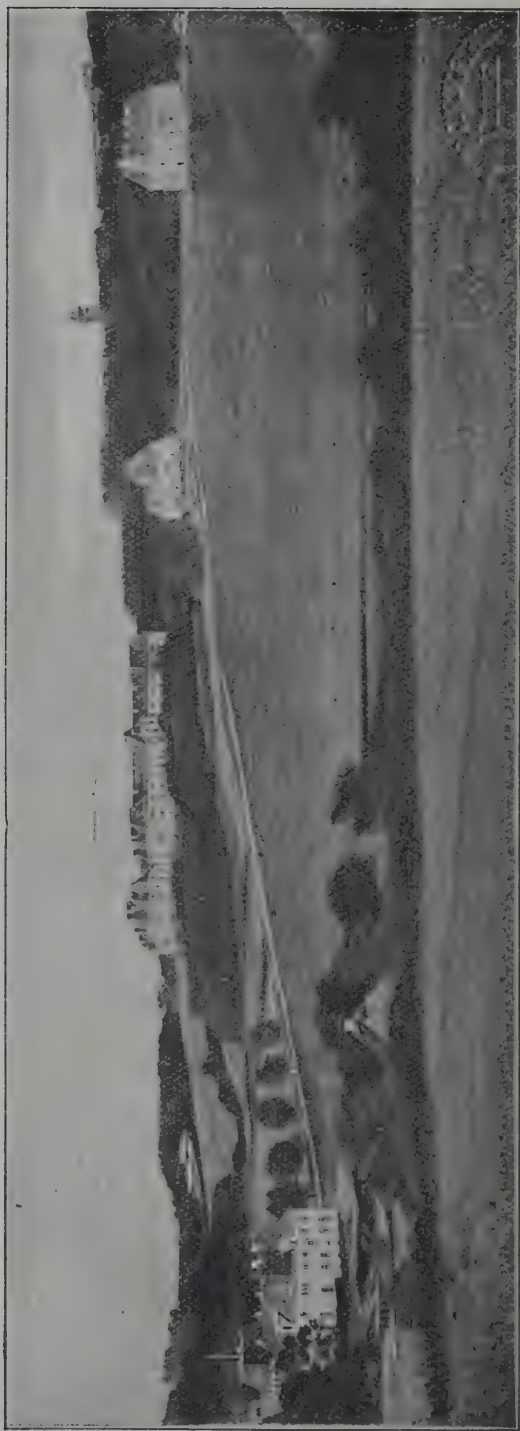
The institution at Brejning covers the district west of the Great Belt. The two island institutions accept cases from any part of the country.

Apart from these two combined institutions, there are two asylums :

(a) Ribe Asylum, opened in 1905, with accommodation for 400 men, women and children of south-west Jutland.

(b) Vodskov Asylum, opened in 1915, with accommodation for about 150 feeble-minded from northern Jutland.

These four asylums are supplemented by two so-called sanctuary homes — charitable institutions under the Danish Interior Mission Society — with accommodation



THE KELLER ASYLUM AT BREJNING FOR THE MENTALLY DEFICIENT. — GENERAL VIEW.

or about 40 women, slight cases, and by a private home for weak-minded people from well-to-do homes. This home can take about 20 cases at a time and is run by a specialist doctor.

"Private nursing" connected with the institutions. The patients are placed — as a rule alone and after treatment at the institution — in private families, generally in the country; funds are supplied by the institution for their maintenance, and are expended under supervision. In many cases this family nursing forms the last stage before the patient is allowed complete freedom.

Auxiliary schools, or special classes, established in the big towns. The largest of these is in Copenhagen and has about 700 pupils, most of whom are weak-minded.

There is no compulsory schooling in Denmark for mentally deficient children, neither is there any compulsory internment in asylums for weak-minded adults, except in cases where a sentence or other legal ruling has decided that the person is dangerous to the public safety and must be treated in an asylum.

None of the existing institutions, apart from the two asylums for men and women at Livö and Sprogö, are conducted at the expense of the State, but the latter pays a very considerable annual grant towards the working of the institutions (at present 650,000 kroner), and in return maintains considerable control over them (in the purchase or sale of property, erection of buildings, staff salaries, etc.).

Although the State in Denmark provides for about 3,450 weak-minded persons, or one for every 1,000 of the population of the country, and is therefore not much behind other civilised States in this respect, it has not yet been able to comply with the people's demand for more accommodation. This applies especially to the lowest class of the inmates. For the sake of the State as well as of the homes this demand must be satisfied as soon as the economic position of the country permits it. At present, the waiting list for the four Danish institutions consists of about 668 applicants, of whom no accommodation is available. Most of these, *i.e.*, about 500, are of the lower group. The number of mentally deficient in the country is not definitely known; there is no accurate registration of them. Their number, however, is estimated at about six to seven thousand, corresponding to two per thousand of the population.

Mental specialists have never attempted to procure asylum accommodation for the mentally deficient in the country. This would be impracticable for the Danish community, unnecessary and indeed unfortunate for those of them who can quite well, and much more cheaply, be looked after with some assistance and supervision in private families, or left entirely to self-maintenance — with a certain amount of supervision, if necessary. Apart from the new Marriage Act, which prohibits marriage with the pronounced mentally deficient, Denmark has no preventive legislation. The question of

sterilisation is thus still at the preliminary stage. The "lethal idea" has not met with and will probably never meet with sympathy among the Danish people.

In conclusion, it should be observed that there is no legislation for the establishment of homes or institutions for the mentally deficient. The working of the Danish asylums is partly maintained by the State grants previously referred to. The annual grant is, at present, about 800 kroner for each case. It is supplemented by payments from the local authority — parish or county — or private persons; the payments are calculated per day of residence in the institution, at the rate of 600 kroner per annum. To these should be added certain net revenues which the large institutions can obtain from agricultural work, market gardening and industries. A combined institution like that at Brejning, which has an expenditure of about 2,300,000 kroner, can count upon an income of about 34,000 kroner in 1924-25 from its industries, and an income of about 48,000 kroner from its agriculture and gardening. Its industries are very comprehensive, and include the following trades: carpenters, painters, bricklayers, blacksmiths, tailors, shoemakers, basket-makers, brush binders, weavers, sewing, knitting, etc. The institution does not use the ordinary nursing staff in the management of its workshops, but has skilled tradesmen to manage them.

The school-home for children normal enough to be educated is a part of the combined institution. This is divided into two entirely separate sections: (a) besides manual training, a literary education is given, whereby a few of the weak-minded children can be brought up to something like the elementary school standard, and they learn reading and writing, arithmetic, literature, religion, geography and history; and (b) where there is no literary training at all, so that their work consists simply of practical, manual training. This section is called the "Occupation Home", and is thus more or less analogous with the latest plan in the English care of the weak-minded — the employment centres.

Whilst a great number of the weak-minded, in Denmark as well as in other countries, must be regarded as requiring internment all their lives, this being especially true of the so-called asylists — the lowest class, whose age of comprehension never reaches beyond five or six years; in the lighter cases, where the age of comprehension is nine to eleven years — if they are not also morally deficient, and if their intellectual defects are not too complicated, the plan is to let them free after treatment in an asylum. For this purpose they are, as previously mentioned, placed by the institution in the care of a family, generally with small farmers or workmen in the country. The institution pays a large or small sum for their keep, supervises them, and can, if the experiment is not a success, take them back again. For some of them this family-tending is a stage of transition towards self-support — complete independence — but in most cases this family-tending is continued as a life-long measure. Of late years, this kind of attention has been so extended that it is very like a sort of "home nursing". The institution also grants payments — subject to supervision — to such weak-minded patients as have never been in the institution but have always remained in their own home. This pecuniary support lightens to some degree the burden which the presence of a weak-minded person in private home must always be, and keeps this group of mentally deficient away from the more expensive treatment in the institution. The Danish

family-tending " has hitherto aimed almost exclusively at placing the weak-minded singly in a private family, whose standard of life he is expected to adopt. The plan tried in America during the past few years, where small groups of weak-minded persons — twenty to twenty-five — are collected outside the institution itself in villas, from which they go out in the morning to earn their living by working in factories, laundries or private families, and to which they return in the evening after the day's work, has not yet been tried in Denmark to any great extent.

In certain circles of mental specialists, it is maintained that the test of weak-mindedness is ability or non-ability to make a living in the community. In Denmark, however, the empirical view is less sharply defined. But even for this minority of self-supporting weak-minded, it is acknowledged on all sides that the possibility of self-support depends just as much upon the nature of the surroundings of the person concerned as upon his own condition.

Since May 1921, Denmark has had an " Invalid Act " by which a number of weak-minded people, *qua* " mental invalids ", have found economic support through an annual grant of 800 kroner per person ; the question whether this arrangement will be continued or allowed to drop is at present the subject of discussion between the legislative authorities and the mental specialists.

THE BLIND

BY DR. GORDON NORRIE,

Vice-President of the National Board of Health.

It is not possible to make any comparison between the various countries with regard to the number of blind persons, because there is no common definition of what is to be understood by "blind". Even in the same country the word "blind" is used in various senses under different circumstances, for in practice one cannot be content with saying that only he who cannot see the light is blind; "blind people" necessarily includes a large number who have some power of sight. If it is a question of school education, one must look upon every child who cannot take part in ordinary instruction as being blind; but when the question is one of public relief, it is the degree of working capacity retained which must decide the point. When talking about the blind, one cannot properly include those who can be cured of their blindness, such as patients with cataract, which can be operated away, whereas cataract patients who cannot be operated upon, or in whose case the operation has not been successful, must be included. For these reasons a census of the blind will always give an uncertain result, and there is, further, the fact that many blind, like deaf mutes and weak-minded individuals, are unwilling to state on the census returns that they have a defect, as they do not wish others to know that they, or their children, are not normal.

The number of blind people in Denmark is estimated at about 1,500.

By the Act of February 25th, 1914, it was decided that whatever may be granted to the blind as relief by the public is not "poor relief", and, in practice, this is interpreted in the liberal way that the relief is given by the municipality when the degree of sight is one-tenth of the normal or less, whilst, in cases of doubt, the matter is placed before the National Board of Health and settled by the Government. Under the Invalidity Insurance Act of May 6th, 1921, most of these blind persons will probably receive invalidity pensions.

A number of private societies support the blind in various ways; for instance, the old society "The Chain" (*Kæden*), which has a Home for Blind Women, like the Home for Able-Bodied Blind Women, opened in 1900 in Mariendalsvej, Copenhagen; there is also the Society for the Promotion of the Independence of the Blind, established in 1862, and "Danmarks Blinde" (established 1863), which help the blind in a variety of ways.

On June 1st, 1811, the society "Kæden" opened the first institute for education of blind children in Denmark, but as the education of blind children gradually became impossible through private initiative alone, the society offered to build a large institution and give it to the State on the condition that the State would undertake the management and the education. The society also made it a condition that The Royal

stitute for the Blind should be managed by a board on which " Kæden " would have 10 members. The present State institute, The Royal Institute for the Blind, was inaugurated on November 5th, 1858. The building is in Copenhagen and was later on, 1880, considerably extended. There is accommodation for 109 pupils. As, however, the number of pupils grew with the increase of the population, the accommodation came too limited, and therefore a preparatory school was established on November 1, 1898, about 120 kilometres from Copenhagen, close to the sea, near the town of alundborg on the north-west coast of Sealand. This Royal Preparatory School for the Blind has been repeatedly extended and now comprises a head school for 50 pupils, an auxiliary school for weak-minded and less intelligent blind pupils — thirty in all — and, finally, a section for small blind children, with accommodation for 20.

As a rule, the blind children are admitted to the preparatory school, where they receive the first instruction, until at the age of about eleven they are transferred to the institute in Copenhagen, where they continue their schooling and also receive training in handicrafts, especially basket-work, boot- and shoe-making, brush-making and, as far as the girls are concerned, in sewing (including machine-sewing), knitting and weaving. Instruction in music plays a very important part, especially the piano, violin and the organ, as well as in theory, and finally in piano-tuning. Only the really talented blind musicians can support themselves — most of the other blind have to resort to public relief.

At the age of 18 to 20 the pupil leaves the institute, but the musicians can receive assistance in order to continue their instruction for a year or two longer ; they live outside, but receive their instruction and board in the institute.

In Denmark there is no compulsory schooling for blind as there is for normal children and deaf mutes, but practically all blind children come to the institute. The fee for residence and instruction is 700 kroner annually, but for poor people there is easy access to reduced fees or complete exemption.

During the last few years special instruction has been given to the pupils with the least sight in special classes, where they learn to read, generally with the help of optical instruments. The pupils, by means of writing and reading, can establish much better relations with others than those who are compelled to rely on Braille. Sufficient experience has not yet been gained to say definitely how much can be attained, but the experiments are very promising. In a public school in Copenhagen there are no classes for the weak-sighted.

With regard to the causes of blindness, the peculiar thing about Denmark is that none of the commonest causes in other countries are of only slight importance here.

(1) We know nothing of smallpox blindness, as, since 1858, there has been only one doubtful case in the institute. The reason for this is that Denmark has had compulsory vaccination since 1810.

(2) *Blennorrhœa neonatorum* no longer plays any prominent part, since, in 1900, all midwives were instructed at every birth immediately to drop a solution of silver nitrate (1 : 150) into the child's eyes. As a midwife attends practically every birth in Denmark, the result is that, whilst of the children born between 1875 and 1904 there were twelve cases of blindness from this disease every five years, there were only three

such cases between 1905 and 1909 ; only three between 1910 and 1914, and only between 1915 and 1919. It is possible, however, that there may still be one or two pupils coming to the institute.

(3) The position regarding scrofula has been similar. Since 1889 it has been strongly maintained in Denmark that scrofula in itself does not produce the so-called scrofulous diseases of the eye, but *pediculi capitis*. As the knowledge of this gradually increased, as cleanliness became more widespread, and as nurses attended to the eyes of children at the Copenhagen schools, this cause of blindness has decreased. Whilst the average number for every five years was formerly 17, there were only three cases among the children born between 1910 and 1914.

During the war, 1914-1918, a great number of cases of xerophthalmia appeared in Denmark, which has resulted in the admission to the institution of 42 children blind from this disease, and practically no decline in the number of cases of blindness caused by destruction of the cornea. It is unlikely, however, that xerophthalmia, which is now so well known and easily treated by proper diet, will give us many new cases of blindness; at any rate, only one or two pupils blind from this cause have come in during the past few years.

The former lack of accommodation has been met ; there is now room at the preparatory school, and a considerable reduction of blind children may be expected in the next few years.

DEAF-MUTISM AND DEAF-MUTES IN DENMARK

BY PROFESSOR HOLGER MYGIND, M.D.

Although deaf-mutism is less frequent in Denmark than in the other European countries, the practical care of deaf-mutes, public management of matters relating to deaf-mutism, and scientific interest in deaf-mutism has in this country reached a high state of development.

At the beginning of the last century, when in other countries only a small number of deaf-mutes were lifted out of their sad social condition by the persevering efforts of single philanthropists, the entire deaf-mute matter was taken up by the State when in 1817 it introduced compulsory education for all deaf-mutes — a measure which in any civilised countries is an end still to be attained. An interest in the pathological anatomy of deaf-mutism was early awakened by *Mackeprang*, a medical man attached to the Copenhagen Deaf and Dumb Institute, who, together with the anatomist *Andersen*, in 1826-36, made a large collection of specimens of the temporal bones of deaf-mutes. A series of writings by medical men on deaf-mutism has since been published (*Premer, Mygge, Mygind, Schmiegelow* and others).

Denmark has also in more recent times led the van in the movement for ordering the deaf-mute question. In 1880, a measure was carried out by which each individual deaf-mute child was ensured an education perfectly adapted to its abilities and needs.

A very important factor has been the regulation by which forms of enquiry have for many years been sent out annually with questions concerning deaf-mutes. By means of these forms it is possible to follow each individual throughout his whole life. These forms have also been of great importance for the collecting of statistical information as to deaf-mutes and deaf-mutism in Denmark. They have been repeatedly made use of in independent works (*Mygind*). The forms are of two kinds, the one referring to children, the other to adults. They are filled up and sent in by the police in Copenhagen, in the rest of the country by the clergyman of the parish. In the first report of a child there is a special rubric which has to be filled in by a medical man. The form referring to deaf-mute children is as follows :

Questions to be answered by the clergyman of the parish :

1. The deaf-mute's place of residence (district, parish, town).
2. The deaf-mutes' full name.

»	»	date of birth.
»	»	birth-place (district, parish, town).

3. Has he (she) shown any capability of speech ; if so, to what extent ?
4. Has he (she) received any instruction (at home or at school) and what result ?
5. What is the deaf-mute's intellectual capacity and what is his (her) occupation at home ?
6. Is the deaf-mute born in marriage or not ?
7. The father's (mother's) name and social position.

In the first report as to the deaf-mute child the following questions are to be answered.

8. Date of father's birth. Birth-place.
If the father is dead, the date of his death. Cause of death.
Has he been married more than once ?
9. Mother's name and position.
Date of mother's birth. Birth-place.
Has she been married more than once ?
10. Date of parents' marriage.
Their circumstances.
11. Are (were) the deaf-mute's parents related and in what degree (possibly in various degrees) ? Especially important is whether they are (were) uncle and niece, aunt and nephew, cousins, second cousins, etc.
12. The deaf-mute's brothers and sisters (both full and half) in succession (deceased included).

Name.	Date of birth.	Date of death.	Cause of death.	In case of half-brothers or sisters, add whether father's or mother's child.

Date.....

Clergyman's name.....

Questions to be answered by a medical man in the first report :

13. A. If the deaf-mutism is believed to be congenital :
(a) Whether the opinion has any (and what) basis in the object of medical examination of the child (especially whether there has been found any deformity of the hearing organs or deformities elsewhere) or is based on what the medical man knows with respect to the child's condition in its earliest infancy.

- (b) Whether any influence was present during the mother's pregnancy which might be supposed to have caused the loss of hearing.
13. B. If the deaf-mutism is supposed to be acquired after birth :
- (a) At what age was the deficiency in hearing first observed ?
 - (b) Where did the deaf-mute live at the time ?
 - (c) From what did one at that time deduce the deficiency ?
 - (d) Is the want of hearing the result of a certain acute or constitutional disease¹, a traumatic lesion, a primary ear disease or other demonstrable cause? Is it known or supposed that this cause has produced a morbid condition (and, if so, what) in the ear itself -- especially if it has caused discharge -- or in the central nervous system ?
14. What was the physical condition of the deaf-mute when medically examined ?
- (a) Was he (she) absolutely deaf or only hard of hearing, and in what degree ?
 - (b) Whether he (she) at the time suffers from any ear trouble (with or without suppuration).
 - (c) Whether he (she) suffers from feeble-mindedness, night-blindness, chronic inflammation of the eye or maculæ of the cornea ?
 - (d) Whether he (she) suffers from any bodily deformity ; if so, what ?
 - (e) Whether he (she) suffers from any constitutional disease (if so, which) or from convulsions, epilepsy, paralysis (what) or other nervous diseases ?
15. Is the deaf-mute cleanly ?
Nightly enuresis ?
16. Questions as to deaf-mutism, deafness, ear-diseases (if so, which) in the deaf-mute's family.
- (a) Among the deaf-mute's brothers and sisters ?
 - (b) In the father or his family ?
 - (c) In the mother or her family ?
17. Questions as to other deficiencies in the deaf-mute's family, such as lunacy, idiocy or strikingly low mental development, epilepsy or other forms of convulsions, paralysis (and which), hysteria, stammering or other nervous diseases, eye diseases, especially deficient sight and night-blindness :

¹For instance, scarlet fever, measles, diphtheria, typhus, mumps, inflammation of the brain (especially epidemic ro-spinal meningitis, rickets, scrofula, hereditary lues, etc.).

- (a) Among the deaf-mute's brothers and sisters ?
 - (b) In the deaf-mute's father or his family ?
 - (c) In the deaf-mute's mother or her family ?
18. (a) Are either of the parents addicted to drink, and, if so, whether the habit has had a deleterious influence upon their bodily or mental condition (especially prior to the birth of the deaf-mute); if so, how ?
- (b) What is the parents' state of health ?
- (c) Do either of the parents suffer from any constitutional (hereditary or infectious) disease ?

Date.....

Signature of the medical man.....

Denmark is, in respect to the frequency of deaf-mutism, extremely favourably situated. According to the last census in 1921 there were only 65 deaf-mutes to every 100,000 inhabitants, whilst, for instance, in the neighbouring countries, Sweden and Norway, there are about double as many. The total number in 1921 was 1,823 deaf-mutes ; of these 978 were males and 835 females.

The number of deaf-mutes has not varied greatly in more recent times, as will be seen from the following figures, which give the number of deaf-mutes per 100,000 inhabitants at the different censuses :

1855	1860	1870	1880	1890	1901	1911	1921
58	55	61	63	65	57	65	65

The fluctuations can, as a rule, be accounted for by the greater or less frequency of epidemic disease, which plays an especially marked part in deaf-mutism acquired after birth : scarlet fever, measles and epidemic cerebro-spinal meningitis.

The education of deaf-mutes in Denmark at the present moment is arranged as follows :

Deaf-mute children under eight years of age can, if the parents desire it, be sent to a kindergarten in the town of Fredericia in Jutland. This school is supported by grants from the State, private contributions and what payment the parents of the pupils are able to make ; practically speaking, every deaf-mute child of poor parents can get absolutely gratis maintenance at this school.

Compulsory education begins at the end of the eighth year, when the children are called in on the basis of the information contained in the above reports. The education is spread over a term of eight years. Parents are, however, allowed to give a deaf-mute child private instruction when a satisfactory guarantee is given that the education thus obtained is satisfactory.

In its first and second year the deaf-mute child is placed in a special preparatory institute in Fredericia, so that examination may be made with regard to its mental capacity, power of hearing and capability of speech. This preparatory institute is a State institute.

Semi-deaf-mutes, *i.e.*, deaf-mutes who have some remnants of hearing or speech, are after one year sent to the State Deaf-mute School in Nyborg in Fynen, where they remain until the time for their compulsory education has ended.

Of the deaf-mutes proper, *i.e.*, such deaf-mutes whose powers of hearing and speech are absolutely extinct, the most intelligent, called " 'A' children ", are after two years sent to the State Deaf and Dumb Institution in Fredericia. This institution has a special director and is in a building by itself in which the deaf-mutes remain for the term of their compulsory education. The fairly intelligent (so-called " 'B' children ") remain in the Royal Deaf and Dumb Institution in Fredericia, under whose director the above-mentioned preparatory school also remains. After remaining here for three years they are boarded out in the town, the State paying for their board and having the supervision of them. The most feebly endowed deaf-mutes (so-called " 'C' children ") are sent after one year to the Royal Deaf and Dumb Institution in Copenhagen, where they remain for the whole term of their compulsory education. They are here taught by the sign method, whilst all other deaf-mutes are taught by speech and lip-reading.

The cost of education is only to a very slight extent borne by the families of the deaf-mutes, as the term " poor " in this case, as in all others in this country, is very elastic; thus a very great proportion of Danish deaf-mute children enjoy a perfectly free education and maintenance. The expenses are principally paid by the State, but the communes also contribute a considerable sum, each commune being obliged to pay a certain amount for each deaf-mute child whose parents are resident in the commune and unable themselves to pay.

Besides this, the State helps deaf-mutes in other ways — among others, by holding societies for those whose compulsory education is finished and by paying two clergymen, one of whom is attached to the church for deaf-mutes in Copenhagen, whilst the other travels about the country visiting the deaf-mutes and holding religious services for them.

Taken all in all, it may be said that there is hardly a country in which more is done for deaf-mutes than in Denmark, and as they among themselves have formed societies principally with the object of mutual support, it would seem that Danish deaf-mutes are better off than most of these poor step-children of nature in other lands.

Medical men wishing to become better acquainted with the Danish deaf-mute institutions and the course of instruction given in them are advised to apply to *Dr. Forhammer*, Ph.D., director of the Royal Deaf and Dumb Institution in Fredericia. Information referring to statistics, scientific literature relating to deaf-mutism's causes and pathology, etc., will be given with pleasure by the author of this article.

CARE OF THE CRIPPLED IN DENMARK

BY DR. POUL GUILDAL,

Head Surgeon at the Society and Home for Crippled.

In Denmark, the care of the crippled has been mainly in private hands, and the country was one of the first — perhaps the very first — to look after the crippled and try not only to treat them orthopedically but also, by a system of training, to put them in a position to work and become self-supporting citizens.

In the year 1871 an old clergyman opened *Samfundet* (Society) — an institution for the infirm and disabled. From a modest beginning in a home opened in two small rooms in a back court, where at the same time an attempt was made to train patients in handicrafts at various workshops and put them to a trade suited to their degree of invalidity, the institution has grown steadily to its present size. On the amalgamation of several of its sections, it took the name of “*Samfundet og Hjemmet for Vanføre*” (Society and Home for the Crippled).

The founder — *Hans Knudsen* (died 1886) — lived to see his institution grow and good results achieved on the principles which he had introduced. These principles, which are still observed and which have acted as models for the re-educational schools for the men disabled in the great war, are known, in circles dealing with the care of cripples, under the name of “The Danish System”. Since then they have been adopted by all the Scandinavian and later by some other countries.

The system, which now seems so obvious, is a wonderful advance on the attitude adopted to cripples fifty years ago, when begging was their only means of livelihood.

Under the new system, cripples are given medical treatment and are at the same time fitted for some trade, when they are, as far as possible, cured by the treatment. Some are able to live a normal life; others, under special guidance, and by choosing suitable occupation or using special tools, are able to earn their living. But during the whole of their training they remain under medical control, so that the orthopedic treatment can be renewed whenever necessary.

The system further provides that the patients must be trained to do work as nearly as possible approaching that of a normal person. No training is given which can only serve as an occupation and not provide a definite means of livelihood. There is, however, one exception — domestic industry — which will be dealt with later.

These principles have been valid for fifty years, but during the last few years have had to be amended to some extent, and they will probably be amended further. This is due to two circumstances — the coming into force of the Invalidity Insurance Act and the considerable amount of unemployment which has prevailed in this country during the last few years. The Invalidity Insurance Act allows to all members of sick benefit clubs who have lost two-thirds of their working capacity the sum of 800 kroner annually. The idea is that this sum, upon which they can barely live, should, if possible, be supplemented by some small earnings, which involves the question of training the disabled in a trade, even if it only brings them in an income of a few hundred kroner annually. Attempts are now being made to do this by giving them the general training in glazier work, carpentering, book-binding and other handicrafts which come under the definition "domestic industry", so that they can, at the average rate in the country districts, earn an income.

But the keen competition in trades has had the effect of ruining a worker whose working capacity is reduced even by some few per cent, and the aim in training the disabled must therefore be as far as possible to fit them for trades in which they can, despite their disability, obtain a working capacity of 100 per cent, or, in other words, in which their infirmity does not handicap them at all.

These new principles for the training of the crippled are not yet generally applied, but it is necessary that they should be carried out in consequence of the development of the times. More account must be taken of the mental working capacity of the disabled, while any disinclination to employ the disabled must be overcome. In the belligerent countries this has, of course, to a great extent, been overcome, but in Denmark we are still combating a certain unwillingness to employ crippled persons, even when their work is as good as that of an able-bodied workman.

THE INSTITUTION.

I will not go through the history of *Samfundet for Vansfære*, which, until quite recently, was exactly the same as that of the other institutions throughout Denmark. Until a short time ago it had, as a private institution, always to struggle with the greatest financial difficulties, but it has carried on, thanks to the keen and skilful work of a large number of volunteers.

The *Samfundet og Hjemmet for Vansfære* is governed by a board of eleven members, with an executive committee of five, who have the daily management. The members of the board are unpaid. The institution naturally falls into two sections — the clinic, where medical treatment is given and to which the surgical appliance section is attached, and the home, which provides for training and education.

THE CLINIC.

All those who seek the help of the institution must pass through a policlinic. The policlinic, which is open every weekday, had 1,950 patients in 1922, and 9,829 consultations were given. It should be observed that a patient who has once been to the policlinic never becomes a new patient again; he can always enter the institution direct. At the policlinic the patient is examined, provided with surgical appliances

or can be admitted to the hospital section for orthopedic treatment. This section which has 72 beds, received 362 patients in 1922, with, in all, 21,781 sick-days. Of these, 276 were operation cases. There is also an out-patient ward to the hospital with 36 beds, used by patients coming from a distance until their appliances are supplied or repaired. This ward is not run exactly as a hospital but more as a boarding-house. Further, there is a section for kinesiotherapy, massage and mechanical therapy, and a surgical appliance section, which includes a gypsum moulding room, a smithy, a saddle-making workshop, an appliance room and an orthopedic boot factory. The surgical appliance section employs 35 workmen; these are mainly cripples and old pupils of the institution (23 disabled). The clinic is in charge of a house physician, who also does the administrative work; there are two assistant doctors and a further staff of twenty, including nurses, gymnastic instructors, etc.

THE HOME

This consists of a children's school, where the education given is the same as that of an ordinary municipal school. Some of the pupils reside in the town, while others live at the Home. At the present time there are 100 pupils, 37 of whom live at the Home.

After leaving the school, that is to say at the age of 13 or 14, the children begin their training in the handicrafts school. For youths there is the choice of the following trades :

Joinery	17 pupils.
Bookbinding	14 »
Wood-carving	4 »
Tailoring	18 »
Shoe-making	15 »
Domestic industry	10 »
	<hr/>
	78 »

The girls do not specialise in any subject; most of them learn something of dress-making, plain sewing, darning and repairing of clothing, domestic work, washing and ironing.

There are a limited number of pupils in the surgical appliance section, but only as many as can be utilised for the work of the institution; there is also a joint commercial school for men and women. As in the case of the Children's School, some of the pupils come from the town, but the majority live in the two sections of the institution, one for men and one for women. The period of training in the trades proper is the average four years and is the same as in the case of ordinary apprenticeship, and thus a number of the pupils do journeymen's probation work before they leave the institution. In connection with the handicrafts school there is also an evening school for technical instruction. Finally, a workshop has recently been opened for carpenters who have already left the institution to help them make the change to an independent existence.

The following principles are followed in selecting trades. The pupils themselves are allowed to choose the one for which they have an inclination; the authorities decide

hat measure they are suited to the work, and they are, if necessary, given a certain
 of trial. Enquiries have repeatedly been made among the pupils who have left
 institution as to the results of the training provided, but it has been difficult to
 complete these enquiries, as many have not sent replies. The results vary greatly,
 according to whether the enquiries were made in times of good or bad trade, for it has
 been shown that in periods of decline the crippled are always the first to be unemployed,
 in spite of their training, energy and industry, they seldom attain full working
 capacity. Nevertheless, a number earn a steady living for themselves and their fami-
 ly. In the work of the institution itself, cripples are employed as far as possible ;
 some of the teachers are also disabled, which is considered to be an advantage in some
 cases.

There is, in connection with the institution, a sanatorium, situated some ten miles
 north of Copenhagen on the coast. In 1922 there were at this sanatorium 240 patients,
 in all, 25,324 sick-days. Some of the patients were convalescents from the hos-
 pital section, some were children from the Home who needed a stay in the country,
 the others were rachitic and anæmic children for whom a stay in the country was
 necessary.

SUMMARY OF THE INSTITUTION'S FINANCIAL AFFAIRS.

The cost of working the institution is covered privately and by State endowments.
 In 1922 the State granted, in various ways, the sum of 677,829 kroner. This included
 100 kroner for the payment of the travelling expenses of poor patients to the clinic.

Other revenues were :

	Kr.
Interest on legacies	77,631.30
Share in State lottery profits	29,000.—
Contributions from county councils	1,870.—
» » town councils	2,770.—
» » parish councils	7,420.—
» » banks and saving banks	2,080.—
Members' annual contributions	3,894.—
Gifts and collections	13,487.23
The legacy capital of the institution is	1,311,118.—

These have been supplemented by revenues from the work of the surgical appliance
 section and the fees for patients' board paid to the hospital or the Home. Poor
 patients receive appliances and treatment free of charge ; those who are members of a
 sick-benefit club pay, as a rule, a sum equal to that paid by the club, which, in the case
 of appliances, is only half the cost, with a maximum of 75 kroner. The clinic makes
 the same charges for board as those paid by the sick-benefit club to the local infirmary.
 Patients who can afford it pay full price for appliances and treatment. To this cate-
 gory belong patients whose expenses are paid by the State (the Poor-Law Authorities)
 and the institutions (Invalidity Insurance Fund or insurance companies). In 1922 the
 surgical appliance section supplied free appliances and orthopedic footwear to the value

of 281,379 kroner, and received as full and part payment for bandages and footwear 198,804 kroner.

Pupils who live in the institution pay 600 kroner for board, lodging and washing. In by far the greater number of cases this payment is made by the State, but, in accordance with paragraph 61 of the Paupers' Act, is given by the Poor-Law Authority without imposing the conditions of poor relief. The expenses for each pupil amount to about 900 kroner.

Full particulars of the expenses of the various sections of *Samfundet og Hjemmet for Vanføre* are given in the annual report.

The institution is situated at 34, Toldbodvej, Copenhagen, where, with various extensions, it occupies from No. 32 to No. 42 inclusive. The buildings are for the most part rebuilt dwelling-houses, and the consequence is that they have not the appearance of a modern hospital and institution; on the other hand they have more homely comfort, and, although everything does not comply with the strictest modern hygienic demands, as to cubic space per person, the general health is, on the whole, good. The Institution has been spreading constantly and has time after time outgrown its premises. At the moment it is continually handicapped by lack of space; the waiting lists in almost all sections are long; for instance, no more pupils can be admitted for training for at least twelve months.

As I have previously stated, almost the only institution for cripples in Denmark is the *Samfundet og Hjemmet for Vanføre*, but, since 1921, when South Jutland and Denmark were reunited in accordance with the Treaty of Versailles, there has been a new institution at Scanderborg, established on the model of the former institution, for the treatment and training of South Jutland cripples. In that institution about 200 cripples have been trained, and it was established by the State in collaboration with the South Jutland Fund (which was started on the occasion of the reunion with Denmark) and the Danish Red Cross. During the course of 1924, however, work at that place will be discontinued.

CHILD WELFARE IN DENMARK

BY OLUF J. SKJERBAEK,

Chief Inspector of the Homes of Education.

The term "Danish child welfare" is understood to mean all measures taken by the town, by public grant, or under Government supervision for children below the age of 18 — or in exceptional cases for those up to 21 years — who require special attention not exacted by children in general.

By this definition of the term we exclude elementary schooling, whether given in public schools or private schools, all advanced education and professional training, and all measures taken for medical treatment of acute diseases. Notes regarding certain chronic diseases will be found later in this document.

The measures taken for child welfare in Denmark are :

I. Measures taken in conformity with the Act of June 12th, 1922, provided for by Child Welfare Councils (Guardian Councils), or in conformity with the Children's Act of 1905. These provide for the bringing-up of children away from their own homes or assist the parents in bringing up the child.

II. Measures for the welfare of children suffering from certain ailments, especially crippled, blind, deaf-mute, imbecile, epileptic, insane and tuberculous.

III. Provisions made by Boards of Guardians for children who are destitute and, in certain circumstances necessitate, their being brought up away from their homes (Act of April 9th, 1891, relating to Poor Relief).

IV. Rules for State contributions to child welfare (laws relating to payments under affiliation orders, and statutory rules for the support of children of widows).

V. Provisions made by private associations and institutions for the welfare of children and young people under the supervision of public authorities.

To these measures should be added :

VI. Provisions for foster-children and other children who have been under the supervision of the authorities since January 1st, 1924 (Act of March 28th, 1923).

VII. Rules for the protection of children and young people employed in trades. The most important of these are: the Factory Act of April 29th, 1913, the Apprentice Act of May 6th, 1921, the Act of the same date relating to the legal relations of master and employees, and the Act of July 10th, 1922, relating to the work of children and young people.

VIII. Rules for the prevention of cruelty to children.

I. THE CHILD WELFARE COUNCILS AND THEIR WORK.

The number of children provided for by the councils numbered 4,374 at the end of 1922. This figure only includes children who, according to the decisions of the Child Welfare Council, have been removed from their homes. In recent years the number has been steadily decreasing. No statement can be made as to the number of children who receive help in their homes through visiting guardians, etc., appointed by the Council. The following figures show the number of children cared for away from their homes at the end of the five years 1918-1922 inclusive.

1918	5,226
1919	5,144
1920	4,895
1921	5,687
1922	4,374

The conditions under which children are submitted to the control and care of the Child Welfare Councils (Guardian Councils) are as follows :

The Council may decide to remove from home any child under the age of 18 years if this step is necessary for the welfare of the child and for the following reasons :

- (a) If it has displayed an intractable temper or has shown exceptionally bad behaviour ;
- (b) If, owing to the viciousness, gross negligence, or incompetence of the parents or guardians, it is exposed to demoralisation or mismanagement ;
- (c) If it is ill treated by parents or guardians or treated in such a way as to endanger its mental or physical development.

If the child is above the age of criminal responsibility, *i.e.*, 14 years, and has committed an act which if committed by an adult would be punishable, the prosecution is either completely withdrawn or the carrying-out of the sentence is postponed or entirely suspended on condition that the Child Welfare Council provides for the child.

The Councils may therefore be called upon to provide both for difficult children and for children who are being mismanaged, ill treated, or exposed to demoralisation or neglect.

There is a Child Welfare Council in every municipality ; in some of the larger ones there are more than one. The members of the Council are elected by the Municipal Corporation. In taking a decision for the permanent removal of a child from its home, the Child Welfare Councils in country districts summon the judge of the local County Court, whereas the Child Welfare Councils in the towns always have a lawyer on the Council. A special arrangement applies to Copenhagen, as the Council has a chairman and a deputy-chairman appointed by the Minister of Justice, both lawyers, an executive committee, two members of which take part in the decision of any question, and a number of district guardians possessing a special knowledge of the conditions in the different quarters of the town, of whom four take part in the decision of any question.

The Child Welfare Council has to enquire into every question that arises, partly examining persons who possess a special knowledge of the facts and partly by making enquiries from the school, the parson and the doctor. In all questions which come under the Board of Guardians the competence of the Council is restricted so that whenever bad economic conditions in the home are considered to be the actual cause of the mismanagement of the child, or if the parents receive out-door relief, the Council is to enter into negotiations with, or call for the opinion of, the municipal corporation. The Council does not provide for children who are imbecile, insane, epileptic, deaf-mute, blind or tuberculous, but only sees that the case is referred to the competent authority, *i.e.*, the Board of Guardians, but the Council may, whenever such action is called for, decide to have such children temporarily removed from their homes. Should the parents be reluctant to provide for their child in a suitable way, the Council may deprive the parents of their right of parentship. This may also be done if the parents interfere in the arrangements made for the welfare of the child once they have been made.

Without a detailed investigation, no absolutely reliable information can be given to the people in whose charge the children removed from their homes have been placed, but a number of details can be given as to the different "Homes of Education" which are at the disposal of the Child Welfare Councils and the number of children provided for in such wards. Starting with the eldest children, there are the Reformatories, which admit the most difficult children above the age of 14-15 years.

There are five Reformatories for boys :

State Reformatories	3	with accommodation for	186
Private " 	2	" " "	102

and six for girls :

State Reformatories	1	with accommodation for	25
Private " 	5	" " "	161

In all, 11 Reformatories, with accommodation for 474 children.

There are Industrial Schools, which admit difficult children from the ages of 7 to 14 or 15 years :

Industrial Schools for boys : There are five of these, all private, and with accommodation for 440 boys, but one with accommodation for 60 boys will probably be discontinued in the near future :

Industrial Schools for girls :

State Homes.....	1	with accommodation for	36
Private " 	3	" " "	110

Nine Homes in all, with accommodation for 586 children.

The majority of children admitted to the Industrial Schools and Reformatories come under the Child Welfare Councils. For the time being, the number of pupils is about 850, but there are a great many vacancies in the Industrial Schools for boys.

For many years Denmark has been known for its many small Children's Homes, which are especially intended for delicate children or children who, for other reasons, for example enuresis, cannot be placed in private families, but for whom an Industrial School would not be suitable ; they also provide accommodation for brothers

and sisters whom it is not desirable to separate by placing them with families. There are at present in Denmark 112 Children's Homes licensed to provide for the wards of the Child Welfare Councils. They are scattered all over the country ; some of them are large, with accommodation for 80 children, but most of them are only small with accommodation for 7 or 8 up to 20 or 25 children. They accommodate in all 2,550 children. According to a census taken some time ago, about one-third of the children provided for in licensed Children's Homes were wards of the Child Welfare Councils.

Of the other children, some are provided for by the municipalities, some by charitable institutions for child welfare, and some by private persons.



GODHAVN : INDUSTRIAL SCHOOL FOR 80 BOYS.

There are 18 "Homes", which are wholly or mainly for infants. These Homes have accommodation for 425 children. Some of them admit the mothers as well as the children ; but for infant welfare there are also a number of Detention Homes which admits babies, and sometimes their mothers for shorter periods. There are four of these Homes, with accommodation for 62 children, and in a number of Homes for older children a section is set aside for infants.

Since the year 1900, Detention Homes and Observation Homes have been used in this country for the temporary accommodation of children upon their removal from their own homes. This enables the authorities to form an opinion of the children and to decide whether to place them in families, in service, or apprentice them to some trade, or whether to place them in a Children's Home, Industrial School or Reformatory. The Detention Homes and Observation Homes are referred to in the Act of 1922 relating to the Child Welfare Councils ; there are 46, which are licensed to admit wards of the Child Welfare Councils ; this number includes one State Detention

ne. In all they have accommodation for about 1,170 children, but they are from being full, there being at present more than 200 vacancies. They are not, ever, entirely for the use of the Councils ; according to a recent examination, half of the children proved to be wards of the Councils ; the rest of the children are sent to the homes by charitable institutions or by the Boards of Guardians (municipalities).

It may be said to be a distinctive feature of Denmark that Detention Homes and Observation Homes are being used to such great extent, and experience will mainly continue to prove that it is practical in many cases to use them as a preliminary measure ; the Child Welfare Councils of the greater towns will at any rate not be able to do without these homes.



DEN ENNGAARD : DETENTION AND OBSERVATION HOME FOR BOYS BETWEEN 14 AND 18 YEARS.

The Act relating to the Child Welfare Councils emphasises the importance of *warding the suitable children out in private families* (putting them out to nurse, into service, or apprenticing them, etc.) (see Section 35 of the Act). We may reckon that less than half the wards of the Councils are provided for in Homes of Education of different kinds.

The Act supports Child Welfare Councils in their endeavour to use preventive measures without removal from the home, unless such removal be absolutely necessary. Great latitude is given to Councils in deciding what facts justify their intervention in any given case.

The Councils may appoint visiting guardians to give assistance and advice regarding the bringing-up of children and to decide whether the child shall attend a Day Nursery, a Public Kindergarten, an Infant School, a Recreation Home or a Day Industrial School.

Moreover, the Council may now order that young people above the age for compulsory education shall attend a continuation school.

Assistance in the form of clothing may be granted if necessary to enable a child to attend one of the institutions, and the Council may grant immediate economic

assistance to the home, but only once for the same home, and only when such assistance makes it possible to avoid the removal of the child from its home.

There are at present :

Three Day Industrial Schools, all municipal, with accommodation for 1,000 children.
Twenty-four Recreation Homes, or Day Homes for children of school age in the capital, with accommodation for at least 1,800 children, and eight outside the capital, with accommodation for at least 400 children.

Fifty-five Public Kindergartens, Infant Schools, etc. for children from 3 to 7 years of age in the capital, with accommodation for at least 3,500 children, and 75 outside the capital, with accommodation for at least 3,000 children.

Fourteen Creches, Day Infant Homes, etc. in the capital, with accommodation for about 300 children, and eleven outside the capital, with accommodation for about 140 children.



LYKKENS GAVE : DETENTION AND OBSERVATION HOME FOR BOYS BETWEEN TWO AND SEVEN YEARS AND GIRLS BETWEEN TWO AND FIFTEEN YEARS.

Some of these institutions were established as far back as the beginning of the past century. The Act of June 30th, 1919, sanctions parliamentary grants to promote day nursery work. At present this grant amounts to 300,000 kroner annually. A few statements about the expenditure of the State on public child welfare may not be out of place here.

According to the national accounts for the financial year 1922-23 the expenditure was as follows :

Under the Department of Justice :	Kr.
For Child Welfare Councils, Detention Homes and various charitable institutions for child welfare.	489,300
Under the Department of Education :	
State Education Homes, Industrial Schools and Reformatories, etc.	415,700

Subsidies to private Education Homes (Industrial Schools and Reformatories)	739,500
Provision for wards of the Child Welfare Councils in Homes of Education, and for wards placed in private families, etc.	1,522,900
Sundry other expenses in connection with Education Homes, etc.	94,700
Subsidies to Children's Homes	640,500
Subsidies to Societies for Foster Homes	88,000
Day nursery work	309,800
The " House of the Child "	18,000
Establishments for the Relief of Children	24,000
Extraordinary expenses, especially for various building operations in connection with Homes of Education	104,500
Pensions to people who have been in charge of Children's Homes, Infant Schools, etc.	17,000
In all	3,974,600



" KING CHRISTIAN IX " CHILDREN'S HOME IN AARHUS.

The aggregate expenditure for the year 1922-23 will approximate 4,463,900 kr. Full particulars cannot be given as to the expenditure of local authorities under the Children's Act of 1905. For the municipality of Copenhagen the expenditure amounted to 277,000 kr. for the financial year 1921-22. On this basis the total expenditure of all municipalities may be estimated at about 900,000 kr.

When dealing with the Homes of Education at the disposal of the Child Welfare Councils, it is appropriate to mention other similar institutions which have not applied for licence pursuant to the Act, but which nevertheless perform educational work similar to that in the licensed Homes of Education.

The Act provides that all proposed Children's Homes, Detention Homes and similar institutions which admit children under the age of 15 years shall in future be reported

to the Child Welfare Council before beginning their work and be subject to the supervision of the local Child Welfare Council and the chief inspector of such institutions.

At the present time there are in the country 32 Children's Homes with accommodation for about 1,000 children. Among these may be mentioned "Kong Frederik den 7's Stiftelse" at Jægerspris, with accommodation for about 300 children — whose number, however, cannot be provided for at present owing to the high cost of living — and Miss *Schneider's* five Homes with accommodation for 100 children in all. Four of the Homes mentioned are municipal.

There are 26 Homes of Detention not licensed, mostly intended for stays of shorter duration, with accommodation for about 820 children. Eleven of the Homes are municipal and are intended especially for children under the care of Boards of Guardians.



BRAASKOVGAARD : STATE REFORMATORY FOR BOYS BETWEEN 16 AND 21 YEARS.

Article 48 of the Act provides that children in all *licensed* Homes of Education shall be subjected to regular medical supervision. The expenses arising therefrom are refunded to the Homes according to rules fixed by the Department of Education. The teaching in the Homes of Education is subject to the same rules of inspection as that in the elementary Public Schools.

All Homes of Education, whether licensed or not, are subject to the sanitary inspection of the district physician.

There are two "*Welander Homes*", with accommodation for 82 children suffering from congenital syphilis.

There are two small homes in Copenhagen with accommodation for 22 mentally deficient girls and, outside the capital, three homes for mentally deficient girls, with accommodation for about 60.

Further should be mentioned the Magdalen Home "*Skovtofte*", near Lyngby and one recently opened at Eiby, near Odense, for immoral girls.

The municipality of Copenhagen also maintains a Truant School, originally called the "Internat", for boys who are in the habit of shirking school. It is the only one in Denmark and has accommodation for 32 boys from 7 to 14 years.

II. SPECIAL PROVISIONS.

There are a number of institutions in Denmark for children who require special physical or mental treatment. The working expenses are divided between the State and the Municipalities according to various rules. They all receive considerable parliamentary grants, although most of them are private institutions.

Among these may be mentioned :

The Cripples' Home in Copenhagen, which has accommodation for 280 children. It was established in 1872 and has a large foundation, but it also receives considerable parliamentary grants.



KÖBJERGHUS : GIRLS' HOME.

The Royal Blind Institute and the Blind Preparatory School in Refsnaes, with accommodation for 210 children. The Blind Institute was established in 1811 and was taken over by the State in 1857.

Six Institutions for deaf-mute children, four of which are State property. In all they accommodate about 370 children. All deaf-mute children above the age of 8 have compulsory schooling.

Five Institutions for imbecile children, which come under the large asylums and have accommodation for 980 children ; and

Two Homes for epileptic children, with accommodation for 132 children.

The following institutions exist for the welfare of *tuberculous and glandular children* :

- 1 Sanatorium for the tuberculous, with accommodation for 158.
- 2 Seaside Hospitals, with accommodation for 290.
- 9 Seaside *Health Resorts*, with accommodation for 510.
- 7 Convalescent Homes, with accommodation for 115.

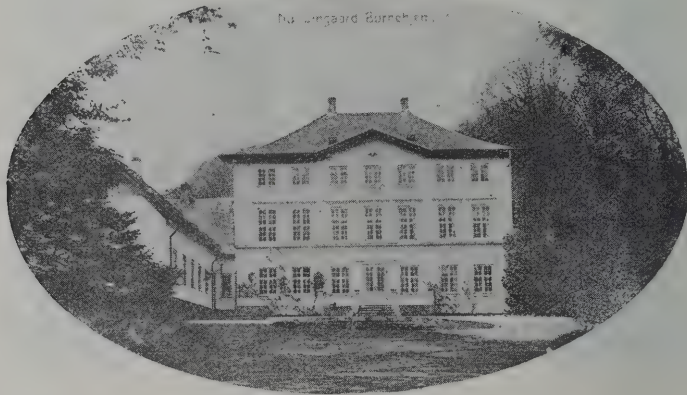
Most of these institutions have been founded on funds obtained by the sale of "Christmas Stamps" and the "Harvest Flower".

There are no institutions for insane children, whose numbers are presumably small. In a statement for 1911-12, only 15 were mentioned and all were provided for by the Boards of Guardians.

The Boards of Guardians (the municipalities) usually provide for the welfare of this special class of children, but the Child Welfare Council may, if necessary, assist in persuading parents who are unwilling that any steps should be taken for the case of their child.

III. POOR RELIEF.

It is laid down in the Constitution of 1849 that those who cannot support themselves or their dependants, those who are not dependent on any other person, shall be entitled to support from the State, subject, however, to various conditions laid down in the law. The Poor Law at present in force dates from April 9th, 1891. It is not the intention to deal with Poor Relief in general, but only with the provisions made by the Boards of



NARUMGAARD : CHILDREN'S HOME NEAR COPENHAGEN.

Guardians for the welfare of children in need of relief. If the parents are alive the children do not generally receive separate relief; a grant of money or food is made to the parents for the support of the home. The Boards of Guardians are, however, bound, under Section 40 of the Poor Law, to keep a close watch on the parents who enjoy permanent out-door relief, and if in spite of repeated reminders they fail to provide properly for the children or fail to treat them decently, if they allow them to shirk school, encourage or countenance their begging, the children are removed from the parents and are suitably provided for elsewhere when permission has been obtained from the superior authorities. This regulation was embodied in the Act of 1922 relating to the Child Welfare Councils, subject however, to the amendment that the superior authorities cannot, without obtaining the agreement of the Child Welfare Council, more than transfer the right of parenthood to the Board of Guardians.

Children who have no parents are according to the Poor Law placed under the charge of reliable foster-parents, if these can be found, or they are provided for

charitable institutions subject to proper supervision in accordance with the Act relating to the supervision of children. After their discharge from school they are in ordinary circumstances provided with regular work or apprenticed to trades but remain under the supervision and authority of the Boards of Guardians till the age of 18. The old custom of contracting tenders for the children with the lowest bidder, or boarding them out in the municipality or parish, has been expressly prohibited by the Poor Law Act, section 28.

Full particulars cannot be given as to the number of children provided for by the Boards of Guardians away from their homes, but it may be estimated at some thousands. In 1919, the Committee for the revision of the Children's Act and the Act relating to foster-children obtained the following particulars from various great municipalities as to the number of children provided for :

Copenhagen	1,085 children
Frederiksberg	198 »
Odense	110 »
Aarhus	126 »



FREDERIKSBORG OPTAGELSESHJEM : DETENTION AND OBSERVATION HOME FOR GIRLS AND BABIES.

Children are to a great extent placed in private families through the assistance of *Societies for Foster Homes* found all over the country ; also in many cases the societies admit children for temporary accommodation into their Detention Homes.

For some time, the Boards of Guardians have provided for numbers of children either in private Children's Homes or in the Homes of the municipalities. In recent years a great many children have also been provided for for short periods in municipal Detention Homes. There is no recent statement of the expenditure of the Boards of Guardians on Child Welfare.

A statement of State subsidies for the year 1920-21, drawn up by the Statistical Office, shows that by March 1921 the following number of children were, under the heading "subordinate persons", in receipt of permanent relief :

In the capital	2,055
» » provincial towns	5,925
» » rural districts	6,528

In all..... 14,508

The majority of these children are no doubt provided with relief by the Board of Guardians in their parents' homes.

It is outside the scope of our subject to give a detailed statement of the development of the feeding of school-children (Act of May 23rd, 1902).

IV. ACTS ABOUT MAINTENANCE ALLOWANCE TO CHILDREN.

The position of children born out of wedlock has never been enviable, and the community has been obliged to attempt to mitigate their lot.



DAY-HOME FOR CHILDREN BELONGING TO THE MUNICIPALITY OF COPENHAGEN.

Since the eighteenth century, the law of this country has made the father of an illegitimate child liable to contribute towards its maintenance, but he is not bound to make such full provisions for it as a father of a legitimate child. By a Decree of October 14th, 1763, the father of a child born out of wedlock defrayed at least half of the cost of maintenance, but only according to the lowest standard of living. There the matter remained until the Act of May 27th, 1908, provided that the maintenance allowance should be fixed in accordance with the conditions under which the mother was living but in such a way as to ensure the child being properly provided for; the standard maintenance should not be below that of good foster-homes in the same part of the country, nor above that of the ordinary middle-classes. In 1908 the father's share was fixed at three-fifths of the aggregate cost of bringing up the child. It was, however, exceedingly difficult for mothers of children born out of wedlock to recover the maintenance allowance, and by the Act of April 20th, 1888, the mother was entitled to have the amount advanced to her by the public authorities, without its being

considered as poor relief for her. The authorities try to recover the amount from the father, but payment in advance to the mother is not affected by the father's actual ability to pay; the Act of May 27th, 1908, even provides that she shall be entitled to the payment when the father has died or left the country.

The object of these regulations is to enable unmarried poor mothers, as far as possible, to keep their children and thereby avoid their becoming a burden to the public.

Only the so-called "normal allowance" is paid, *i.e.*, the amount imposed on fathers who are badly off. This is very small, and with the recent high cost of living this allowance has not been sufficient to cover three-fifths of the usual cost of maintenance of a child in a Foster Home or Children's Home.

Since 1908, divorced, separated or deserted mothers of legitimate children have so been able to receive payment in advance of the alimony, when the allowances for the children have been fixed by a superior authority (in Copenhagen, *Overpresidenten* and in the country the Lords Lieutenants (*Amtmaendene*)).



SKOVBY : REFORMATORY FOR GIRLS BETWEEN 15 AND 21 YEARS.

According to the statement of public subsidies in the year of 1920-21, the number "alleged fathers" on whose behalf the Boards of Guardians have had to advance payments under affiliation orders" and the amounts advanced have been as follows :

	Number	Amounts advanced	Refunded by "alleged fathers"
In the capital	4,096	2,473,000	1,354,000
» » provincial towns	3,007	588,000	248,000
» » rural districts	4,303	817,000	294,000
In all	11,406	3,878,000	1,896,000

The net expenditure for the whole country is accordingly 1,982,000 kr. It must be presumed that the number of children in receipt of relief exceeds the number of fathers. It is well known that several men have had more than one child

born to them out of wedlock. If we allow for an amount of 200 kr. per child, which is rather high, it will be seen that relief has been granted to 19,400 different children.

Provisions for the welfare of children of widows as well as for orphans were introduced by the Act of April 29th, 1913, and subsequent Acts. According to a statistical statement, provision was made for the following number of children by March 31, 1921 :

	Children of widows	Orphans
In the capital	4,477	60
» » provincial towns	5,224	67
» » rural districts	9,763	175
	<hr/> 19,464	<hr/> 302

The total number of children provided for was therefore 19,766, i.e. about half the total number of children of widows under the age of 18, the expenditure for the financial year 1920-1921 amounting to :

Expenditure of the municipalities	1,630,000
» of the State	1,166,000
Total	<hr/> 2,796,000

V. PROVISIONS MADE BY PRIVATE ASSOCIATIONS AND INSTITUTIONS FOR THE WELFARE OF DESTITUTE CHILDREN AND YOUNG PEOPLE UNDER THE CONTROL OF THE AUTHORITIES.

Private associations and institutions are devoting themselves a great deal to child welfare ; further particulars may perhaps be of interest.

The following institutions for the welfare of orphans have been established some time :

The Royal Orphanage was established in 1727 but is no longer a resident institution ; it now provides schooling and financial help only. *The Royal Charity School* founded in 1752, may still be considered as a children's home with a school of its own for boys between the ages of 10 and 14. It was, however, insufficient to relieve even the worst distress, and about the year 1830 private steps were taken to establish Homes of Education for difficult children and to provide help for neglected children. This endeavour was supported by the State. The following institutions date from that time : *Bøgildgaard*, which is now a State Reformatory ; and *Flakkebjerg Institute*, which is still a private Reformatory but in receipt of large parliamentary grants ; *Holsteins minde*, which is now a licensed " Educational Home " (Industrial School) ; and the " Association of 1837 " for the " welfare of neglected children ", which has worked continuously since that date and has especially devoted itself to helping the children in Copenhagen between the ages of 7 and 14. The object of the Association of 1837 was " to board out with trustworthy farmers, or other people in the country, those children who might be, or who had already begun to be, corrupted in their home surroundings ". The association has always used Foster Homes as the best means of bringing up the children in its charge. It was not till 30 years later that the first Society for Foster Homes was established outside Copenhagen ; this was in 1867 th

society on Langeland, but almost 20 years elapsed before the establishment of similar societies became general. In 1894 co-operation was established between eight "Danish Societies for Foster Homes", which together provided for 136 children. Since then the movement has increased, and the Danish Societies for Foster Homes now comprise 39 societies, which by the end of 1922 were providing for 4,094 children, *i.e.* :

Wards of the Boards of Guardians.....	2,127
Wards of the Welfare of Children Councils.....	995
Wards of private persons	952
They were provided for as follows :	
In Foster Homes	2,487
Apprenticed, in service, etc.....	1,045
In Children's Homes, etc.....	562
In all	4,094

This work, of course, requires large funds, the expenditure of the "societies" in 1922 being estimated at 1,405,909 kr. The associations, however, receive considerable parliamentary grants.

The "societies" own and work a great number of Detention and Observation Homes all over the country which are nearly all licensed under the Act relating to the Child Welfare Councils.

In 1898 a society was formed called the "Christian Association for the Salvation of Juvenile Offenders", but it has now changed its name to "Christian Association for the Salvation of Children". Its principal objects are to try to avoid children being punished by imprisonment, flogging or caning; to any of which punishment children above the age of 10 were liable according to the Penal Act of 1866, and to interest people in reclaiming children by placing them in good homes. The association developed rapidly and after two years it began to use Detention Homes and Observation Homes before placing the children in foster-homes. By the end of 1922, the association was providing for 224 children, besides 83 wards of the Welfare of Children Councils, who were divided amongst the six Detention Homes of the association.

There are also the following associations :

The Association for the Welfare of the Young, affiliated with the Y.M.C.A. and Y.W.C.A. and running three Detention Homes, where a joiner's training is given to boys for whom it is difficult to procure a suitable apprenticeship but who need not be placed in a Reformatory. The association was established in 1906.

The Association for the Salvation of Mised Young Girls, established in 1877, which places misled young girls in good private homes.

The Association of Friends of the Home Mission for the Education and Care of children in Unfavourable Circumstances was established in 1900 and is especially active in Vendsyssel.

The association "Fængselshjælpen" (assisting discharged prisoners) was established in 1902 and is running a Detention Home for young men and women near Nyngby.

Finally, " Kvindehjælpen " (for the assistance of women), at Aarhus, established in 1906, which is running four Detention and Observation Homes near Aarhus besides two Reformatories for girls, viz., " Katrinebjerg " near Aarhus and " Genner Refectory " in the neighbourhood of Aabenraa.

The Association for the Assistance of Mothers in Unhappy Circumstances running three homes for mothers and infants in Copenhagen and neighbourhood.

The associations mentioned do not nearly represent all the help given by private individuals for the protection of children and young people. A faithful circle of friends is attached to various Children's Homes, Detention Homes and Institutions for Day Nursery Work and contributes considerably towards their administration; also number of Children's Homes are largely endowed by private individuals.

VI. PROVISION FOR FOSTER-CHILDREN AND OTHER CHILDREN UNDER THE SUPERVISION OF THE AUTHORITIES.

With regard to foster-children, the authorities have to ensure that they are not ill-treated in the homes where they are put out to nurse and that they receive sufficient bodily comfort and moral training. The first Act with regard to the supervision of foster-children was passed in 1888, and the Act of March 1st, 1895, was in force till January 1st, 1924. The number of children placed in families seems to be decreasing. The figures for 1910 and 1919 showed :

	1910	1919
Number of foster-children in Copenhagen	1,950	2,223
Number of foster-children in the rest of the country	10,508	7,829
Total	12,458	10,052

By the end of 1922 the number for Copenhagen had decreased to 1,742.

A new Act for the supervision of children which was passed in March 1923 and came into force on January 1st, 1924, modified very considerably the existing law.

Previously the supervision was merely applied to children under the age of 14 who were placed in private families but whose board was paid for. According to Section 1 of the new Act the supervision may be extended to children under the age of 14 placed in private families that accept no payment, and to adopted children of the same age, if payment is made for the adoption.

The supervision also covers all children up to the age of seven born out of wedlock and not under the charge of the authorities, but the supervising authority may, however, at his own discretion remove the supervision or extend it to children up to 14.

Section 2 of the Act deals with supervision of children not under the charge of the authorities for whose maintenance contributions are made in accordance with the Acts of 1908 and 1913, which deal with illegitimate children and their parents, or in accordance with the Acts of the same date relating to the legal position of wives and legitimate children.

In these cases also supervision may be dispensed with when circumstances warrant it.

The supervision is exercised by the municipalities, but, subject to an agreement between them and the local Child Welfare Council, and with the sanction of the Minister of Justice, it may be delegated to the Child Welfare Council. In municipalities with 10,000 inhabitants the supervision may be delegated to the Local Health Committee if the sanitary regulations in force or special regulations contain rules for supervision as adequate as those contained in the Act.

A rule has been introduced to the effect that it is the duty of a citizen, if he is appointed, to supervise foster-children or other children to whom the law applies. Under special circumstances paid assistants may be employed for the supervision when the Minister of Justice thinks it necessary. The associations for child welfare recognised by the authorities, especially Societies for Foster Homes, may also be employed as supervisors, as was the case with foster-children under the old Act.

Permission to take a foster-child must always be obtained. A distinction is drawn between family-foster-children work, *i.e.* when the child is cared for all the time in the Foster Home, and Day Nursery Work, when the child is brought to the Foster Home in the morning and called for again in the evening. Permission must be obtained for the former even if no payment is demanded, but in the latter case permission is not required unless payment is taken. Before such permission is given an examination of the Foster Home must be made, and the medical certificates prescribed by the Act relating to Tuberculous Diseases must be produced. The child must have a bed of its own. The permission to have foster-children is given in writing for each child and may at any time be revoked. A home which has obtained permission may by the supervising authorities be exempted from supervision when there is no question of making a profit out of the child or when the supervision is exercised by a recognised association. The supervisor of a foster-child must inspect the Foster Home frequently to convince himself that conditions are satisfactory. If directions to remedy defects in the provision for the child are not complied with, the supervising authority may immediately remove the child and make temporary provision for it elsewhere.

The most important of the new rules introduced by the Act are, however, the rules relating to children born out of wedlock. These children are subject to supervision till the age of seven, and there are consequently detailed rules as to notification to the supervising authority of every child born out of wedlock. The supervising authority examines the conditions of the mother and child and sees that the child receives supervision according to the statutory rules. If the conditions are not satisfactory the supervising authority must see that the child is provided for in another way, but a decision about its removal can only be taken by the Welfare of Children Council. A special guardian is also appointed to visit these children, unless the supervision is exercised by a recognised association, when exemption from supervision may be granted. If public money is used for providing for a child born out of wedlock, the supervising authority must see that this money is properly used, and there are certain rules restricting the mother's use of the contribution.

On an average about 8,000 children annually have been born out of wedlock during recent years. Even though a great number of these children are quickly

legitimised by matrimony, and about 10 per cent die in the very first year of their life. Several thousand children come under supervision each year.

* * *

The object of Act No. 63 of April 1st, 1914, is to put an end to secret adoption, which formerly caused the death of many infants. By this Act private persons cannot act as middlemen when placing children in foster-homes, or in the adoption of children below the age of 14 years, unless they have obtained special permission from the Minister of Justice. By a Decree of June 20th, 1914, further rules have been framed for persons receiving such permission.

A number of Associations for Child Welfare, some Children's Homes, and some private individuals who through their work are in connection with child welfare have, however, obtained permission to assist in placing children in foster-homes or adopting them.

VII. STATUTORY RULES CONCERNING PROTECTION OF CHILDREN AT THEIR WORK

The rules concerning protection and supervision of children employed in professions and trades are found mainly in the Act of April 29th, 1913, relating to work in factories. Municipal by-laws have also been issued on the basis of this Act and of the Act of July 10th, 1922, relating to the work of children and young people in trades, industries and transport business.

The first Danish " Factory Act " was passed in 1873 entitled " Act relating to the work and supervision by the authorities of children and young people in factories and workshops ". By this Act it was unlawful to employ children under the age of 14 years in the work covered by the Act, children between 10 and 14 years might not be employed for more than six hours a day and children between 14 and 18 years for no more than ten hours a day.

In 1901 the limit of age for children was raised to 12 years, and the working hour for children attending school was reduced to 5½ hours. Protection of children was strengthened by the Act of April 29th, 1913. Children who have not been lawfully discharged from school, *i.e.*, children under the age of about 14 years, may not be employed for work in factories or workshops conducted on the same lines as factories. For young people between 14 and 18 years of age the working hours are limited and must not be longer than for adult assistants in the trade in question. Rules exist prohibiting the employment of children to guard machines, even outside factories. Certain exceptions are, however, made as regards agriculture. The municipal by-laws apply to work not covered by the Factory Act. For such work the employment of children under the age of 14 years may be completely prohibited, and the employment of children between 14 and 18 years may be limited or further regulated, either because the work is considered too heavy for children or because it entails danger to the moral

of the children. The by-law of November 2nd, 1918, for Copenhagen and Frederiksberg prohibits the employment of children not lawfully discharged from school in the following work : delivery of milk for dairies, employment in refreshment rooms or inns, cinemas, music-halls, circuses and similar entertainments, on skittle alleys, merry-go-rounds, as well as all sorts of gambling, washing bottles and bottling, trading, collection of money, unless the money is paid for goods delivered by the children and is accompanied by a receipt, and employment in parcels delivery offices, kiosks, etc.

The Act of July 10th, 1922, has now, in conformity with a convention made in Washington in 1919, laid down as a general rule that children under the age of 14 may not be employed in handicrafts industry and carrying trade. Children between 14 and 18 years may not as a rule be employed on night-work. An exception is made of work in which only members of the family of the child are employed.

In recent years we have the Act of May 6th, 1921, relating to apprentices, and the Act of the same date about the legal relations between master and servants. The Apprentice Act provides that nobody may be apprenticed who has not been lawfully discharged from school and completed his 14th year. The working hours may not be longer than for assistants in the trade who have served their apprenticeship, to which is added half-an-hour for preparing the work and clearing up afterwards. The master sees that the apprentice is member of a sick club and pays the subscriptions on his behalf.

The Act relating to the legal relations of master and servants applies to persons who place their whole working power at the disposal of their employer for agricultural, domestic or other unskilled work. Children who have not been lawfully discharged from school may not be employed within school hours or confirmation class and must be given the time necessary for preparing their lessons. Assistants under the age of 16 may not be employed in work which exceeds their powers, nor for hours beyond the normal.

Assistants who lodge at their masters' homes must be given a light and airy room, to which there must not be direct access from a stable. They must have their own bed, sheets and towels. The master is not allowed to give his assistants intoxicating drinks nor to give them notice directly they fall ill, but the assistants during illness are entitled to board and lodgings for a certain period. Assistants under the age of 18 years may not divest themselves of their legal rights by an agreement entered into with the master.

VIII. OTHER REGULATIONS FOR THE PROTECTION OF CHILDREN.

Among the rules for the protection of children against cruelty or other injury, a prominent place must be given to the rules in the Penal Law which make cruelty to children a punishable offence, and to certain rules in the articles of the Penal Law relating to offences against decency and morals. Section 202 of the Penal Law provides that persons who treat their own children, or other children confined to their care, with cruelty are liable to imprisonment and in certain cases to confinement in a house of correction for a term of up to two years, even if the cruelty does not result in wounds or other injury. Among the rules relating to offences against decency and morals, Section 174 of the penal law makes it a punishable offence to seduce a girl between 12 and 16 years of age. It affords, however, inadequate protection for girls of that

age, as the rule is worded and interpreted in too narrow a sense. The rule is not applicable in cases where the girl is the inviting party or is not a virgin, and prosecutions as a rule only instituted by her parents or guardian. It is, however, generally acknowledged that the rule is inadequate, and it will certainly be amended by a reform of the penal law. The new Act relating to Welfare of Children Councils contains a rule in Section 81 which provides for the punishment of parents or other educators guilty of seduction or neglect of their own children, or other children confided to their care, or who treat them in such a way that their physical or mental sanity is seriously endangered. Prosecution is instituted only at the request of the Welfare of Children Council.

By Section 82 of the Act, if a person addicted to intemperance is being prosecuted under that Act (Sect. 81), he may be confined in a reformatory for inebriates instead of other punishment. This, however, can only be done if the Welfare of Children Council is of the opinion that it will be possible to keep the children at home or if the children can be restored to their own home provided the person addicted to drink is removed.

Section 83 of the Act renders it incumbent on anybody who has knowledge that a child is being subjected to bad treatment to report the matter to the Welfare of Children Council. Persons failing to give such report render themselves liable to punishment at the request of the Council.

Section 76 of the Act relating to the Child Welfare Councils must likewise be considered as a protective measure for children and young people, as it gives the Council the right to send a representative to attend the examination of children or young people before a police officer or in a court of law, when it either concerns an offence committed by the child which would be punishable if committed by an adult or an examination arising from an offence against decency and morals. This provision was adopted amongst other reasons, because the Councils were of the opinion that in some cases of offences against decency and morals in which an examination was necessary, the examination had gone unnecessarily into details, and because it was advisable that the Child Welfare Council should follow such a case from the beginning, as cases often arise where the Council is called upon to provide for the child.

Act No. 145 of March 12th, 1918, of "Campaign against Consumption", and Act No. 81 of March 20th, 1906, of "Measures against Public Immorality" contain rules for protecting children against infection from consumption and venereal diseases.

By Act No. 272 of May 6th, 1921, Section 8, persons carrying on pawnbroker business or trade in second-hand articles are prohibited from taking pawn or buying second-hand articles from persons under the age of 18 years. The utility of this Act was proved by the numerous cases in 1918-19 of pawnbrokers, old-clothes men or iron-men who took pawn or purchased second-hand articles from children and quite young persons. These cases brought out the fact that the great facility with which articles like metals, bottles, etc., were sold or pawned tempted children to commit criminal offences.

By the Licensing Act of May 10th, 1912, intoxicating drinks (gin, wine and beer containing more than $2\frac{1}{4}$ per cent alcohol) may not be sold or served to young persons under the age of 16 years. By the Act of March 17th, 1922, relating to the operation of moving-picture shows, all moving pictures are submitted to censorship, and pictures which have a brutalising or demoralising effect are suppressed by the censor. Certain films may be prohibited for children.

Since 1905 the responsible age as regard crime is 14. Children under that age are in no circumstances liable to punishment. With regard to children between 14 and 18, the Minister of Justice may, when no very serious criminal offence has been committed, withdraw the charge on condition that the child is taken care of by the Child Welfare Council. The charge is nearly always withdrawn, and it is rare for first offenders between the ages of 16 and 17 to be convicted. Experience also shows that imprisonment is useless and may be injurious to very young people.

Children above 14 may be placed under custody, but the new Act relating to Child Welfare Councils enables the Councils to assist the courts in providing other suitable accommodation for children until their cases are decided, and it is hoped that these measures will lead to a continual decrease in the number of children between the ages of 14 and 18 placed under custody.

CHILD WELFARE IN DENMARK.

STRAY COMMENTS¹ BY PROFESSOR S. MONRAD, M.D.,

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The first steps to introduce child welfare in Denmark seem to have been taken at the close of the fifteenth century when King Christian I obtained permission from Pope Sixtius to found the so-called *Helligaandshospital* (Holy Spirit Hospital) in Copenhagen, where foundlings and children born out of wedlock were admitted free, as the funds required for the working of the hospital were procured, among other means, by the sale of letters of indulgence.

More than a hundred years later (about the year 1620) the so-called *Børnehjem* (Children's Home) was opened, also in Copenhagen, where foundlings and intractable children over six years were admitted, fed, and trained in different trades. The children were to remain in the home till the end of their nineteenth year; the girl might, however, be discharged earlier if anybody would marry them. This purely humanitarian institution was a quite unique undertaking at that time, and it was so extensive that at times up to 700 persons were cared for in the home. The rooms were consequently frequently overcrowded, and it was by no means rare for five children to share the same bed, the boys' dormitories even holding at times not less than 4 beds, each bed being shared by from four to five boys. This overcrowding, coupled with the lack of a sense of cleanliness of that age, as a matter of course resulted in miserable conditions and fostered great sickness, which was not easily kept within bounds. One child caught it from the other, and the King would in vain hold the physicians responsible when the rate of mortality rose to a disquieting height. As, in spite of all endeavours on the part of the King, the administration continued to be both expensive and bad, it was resolved in 1650 to close down the home after thirty years' activity.

In 1662, the *Ny Børnehuse* (New Children's Home) was opened, which, however, from the very beginning was placed in a peculiar and fatal dual position, as it was not only to act as a home of education for orphans and homeless children but also as a workhouse for vagrants, beggars and other persons a burden to society. The population within the walls of the Children's Home soon grew into a motley company, and the hospital was soon stamped as a depot for the dregs of society, which caused irreparable damage to the children. Moreover, an almost entire lack of money paralysed its activity, and it is even reported that in 1711 the funds of the hospital were only 10 rix-dollars, and that it could not even get coffins on trust for those who died in the home. It is obvious that, under such circumstances, things went from bad to worse, and the state of affairs within the home, so far as we can gather, became

¹ For the historical statement, use has, amongst others, been made of: AXEL PETERSEN, "Samfundet og Børnene". 1904; ALFRED TH. JOERGENSEN, "Børnesagens Historie"; articles in the journal *Boernesagens Tidende*, 1915-16; besides HEIBERG and LEMCHE, *Love om Tilsyn med Plejebørn*, 1918 (Acts relating to the Supervision of Foster-children, 1918).

appalling. Repeated child-murders in the home were reported, and it is even stated that the crimes were committed because the culprits would rather suffer the penalty of death than stay in the home subject to further compulsion. Even if the children did not lose their lives in that way, they were undoubtedly discharged from the home in a worse state than when they entered it, for any possibility of improvement in such surroundings was quite out of the question.

These terrible conditions gave the impetus to the erection in 1727 of the Royal orphanage (*det kgl. Vajsenhus*) in Copenhagen, partly at the initiative of King Frederik IV. The orphanage, which was to be "a perpetual institution till the end of the world", was intended for the time being to accommodate a hundred children of both sexes, and, as time went on, to provide accommodation for more. It was to be a place where poor fatherless and motherless children could be provided for and brought up, in order to produce for the benefit of the country a number of well-disciplined young men and women, with no distinction due to conditions of life or descent, and all people to be treated alike. When admitted, the children should be at least five years of age and, as a rule, be discharged from the institution at an age of 15-17 years. Insane children, or children of such physical infirmity as to render them incapable of work, were excluded from admission, nor did the institution admit intractable children or children who had shown a tendency to profligacy.

In the institution, which had its own jurisdiction, a severe discipline seems to have been maintained in the early days. Children from the orphanage, in very grave cases, might be lodged for some time in the Children's Home for correction, and, moreover, other peculiar means of castigation existed within the institution itself. Two of the apprentices of the orphanage who had run away from their masters were flogged in the presence of all the children and by the children themselves, and two girls who had stolen repeatedly were given the following punishment: first, to be admonished and reprimanded by the parson in hearing of all the children; next, in the presence of the girls, to be castigated by the teacher; and, finally, to be fed for some days on bread and water, and during meal-times on their bended knees to see all other children eating.

It was, however, not many years before the orphanage was subjected to strong criticism. It was maintained that the morals of the children had deteriorated and that theft and the use of profane language had become common vices. A constantly increasing deficit from the working of the institution encouraged the growing distrust, and towards the close of the century the institution was generally considered a failure. The orphanage and its different work had a changeable and erratic existence during the following fifty years, until, in 1875, it secured a building of its own in Norrefarimagsgade, which is still the home of the institution and the school of the orphanage. In this school some 280 orphans or fatherless children now receive free instruction, but, besides these children, 120 orphans are partly provided for by the institution through pecuniary assistance to the relatives or persons with whom the child is living. The orphanage also distributes every year about 15,000 kroner for the education of orphans in the provinces. The income is derived from the interest on a capital sum of about one million kroner as well as from a privilege to print bibles, hymn-books and catechisms.

Another of the great homes of education of the eighteenth century, which, after many vicissitudes of fortune, has likewise been preserved up to the present day, is the Royal Charity Home (*Kgl. Opfostringshus*), which has now a stately building of its own on Kalkbraenderivei, where 110 boys are being provided for and educated from their tenth to their fourteenth year.

The first attempt at instituting special care for infants was made in the beginning of the eighteenth century. At that time morality was very low in Copenhagen, and it was by no means a rare case for a woman to give birth to her child in the streets and for newly born children to be found drowned in the wells of the city. It had originally been the intention that the orphanage should act also as a foundling hospital, but, when the orphanage from its earliest days undertook different work, it became necessary to take further steps to prevent the numerous child-murders and concealed deliveries. About the year 1710 the first detention homes (*Oplagelseshjem*) for infants were opened in private houses, but, as this measure soon proved inadequate, different plans for a "orphan and foundling hospital" were formed, where miserable and helpless mothers might place their newly born children. Finally, in 1750, a foundling hospital was opened on Christianshavn, and about the same time "the Free Midwife Hospital" (*det frie Jordemoderhus*) was established, partly on the initiative of King Frederick who had no greater desire than to provide against the frequent deliveries in concealment and the resulting death in so many cases of the new born children. The Midwife Hospital was, however, soon the scene of abuses, amongst others, of married women being delivered in the hospital and leaving their children to the care of the public. These conditions were not regulated until the "Free Midwife Hospital" was incorporated into the Frederick Hospital (*Frederiks Hospital*), where the so-called "new hospital for pregnant women in Copenhagen" was established in a building of its own in the year 1771. At first this institution admitted foundlings as well, as a box was placed in a cellar window bearing the inscription "Salvation of Unfortunate Children", in which mothers might secretly place their infants and at the same time ring a bell. This device, however, led to gross abuses, and was consequently given up in 1774. About the same time a new institution, by name "The Royal Charity School or Orphan Asylum" (*den kongelige Opforstringseller Pleiestiftelse*) was established, with the object of admitting every year 100 newly born children who had been deserted by their parents "partly owing to shame and partly on account of poverty". The institution was to see that the children were placed with trustworthy people in the country, who, during the first six years of the life of the children were paid a reward. After that time, and till their twenty-fifth year, the children were to serve their foster-parents and be their subordinates in return for their maintenance. The girls might not be debarred from marrying before the age mentioned. The foster-parents were allowed to enlist their foster-sons in the army in place of their own sons and might transfer the right over the children to other people, but the children should, under no circumstances, be considered as belonging to an master, and the blot on their birth should in no way "reflect any discredit on them". The supervision of these foster-children rested with the local clergy, but, on account of the alarmingly great mortality among the foster-children, a request was made in 1813 to "noble-minded Danish women" to take up the supervision of foster-children placed in private families, and at the same time prizes were given to the best foster-parents.

This was a very interesting attempt at placing children in private families, but though a reward was paid, if only till the children's sixth year of life, it was hard to find places for the children. It therefore became necessary in 1804 to extend to the fourteenth year the period during which a reward was paid and to make a special payment at the time when the child was taken over and at its confirmation. The last increase of the reward took place in 1874, and at the same time the management of the institution was authorised to request the foster-parents to adopt the child or

receipt of a capitalised sum equal to the rewards for the remaining time, as well as prize and outfit for the child.

All this very extensive fostering and adoption work was, however, discontinued in 1894, and the support subsequently granted to children and mothers discharged from the Nursing Home was limited to pecuniary assistance during the months immediately following upon the birth. In other words, the Nursing Home now ceased to be what originally was intended to be — *viz.* an institution by which provision was made for the placing and education of unhappy infants ; but its history is very instructive as regards the placing of children in private families at the instance of the authorities.

The two institutions, the Maternity Hospital and the Nursing Home, which in 1804 were combined under one management, were in 1882 assigned to the supervision of the Frederick Hospital and removed, together with this, in 1910 to the State Hospital (*Rigshospitalet*). They are still under the authority of the management of the latter. According to the regulations in force, the State Hospital in no case makes provision for children born in the home for which reason the mothers, when discharged from the Maternity Hospital, must take their children with them. Any unmarried primipara woman lying in a free bed may in return receive from the hospital a nursing assistance which at present amounts to 1½ krone a week, granted for a period of thirteen weeks from the birth of the child, not counting the time in which it has been in the hospital. For children living within the area of the city of Copenhagen, the payment is made only on condition that the child is presented for examination and inspection at the child-clinic of the State Hospital.

It is well worth noting here that free consultation for destitute pregnant women has recently been established at the State Hospital, where advice and instruction are also given to other pregnant women — a measure which will probably play a valuable part in the campaign against hereditary syphilis.

When Denmark, in the first years of the nineteenth century, had recovered from the depression resulting from the war with England and the resulting monetary crisis, the philanthropic work was resumed with great energy not only by the State but still more by private individuals. The nineteenth century has shown great and important progress in the development of child welfare in Denmark. An important factor was the appearance of a number of children's friends, prominent personages who, with energy and fervour, took care of unhappy children and who knew how to make people deeply interested in child welfare and to make them understand it.

About that time, Fellenburg's model institution in Switzerland was on the lips of all people interested in child welfare, and it was therefore only natural that people wished to make an experiment with that system in Denmark. With the help of Jonas Lin, titular councillor of state, two young graduates of a training college — Peder Sørensen and Peter Schmidt — were chosen to go to Switzerland at the public expense to be trained at Fellenburg's institution for about a year ; after their return, an institution of that system was opened in the year 1827 on a farm (" Cathrinelyst ") belonging to the Soro Academy. The teachers were to act both as school-teachers and agriculturists and were to instruct the pupils of the institution " in such work and knowledge as will make a good and well-informed peasant ". All field, garden and farm work was, as

far as possible, to be done by the pupils, who were likewise to be instructed in the ordinary school subjects in conformity with the rules for elementary education in the country; they were likewise to be trained in a workshop established near the institution to repair and, as far as possible, to make the implements required for work in the field, in the garden, and for domestic industry on a farm. Boys under six years of age were not admitted, and before admission their state of health was to be examined. Children who were provided for by the boards of guardians were admitted. The dress to be worn in the institution was to be simple and not more than was necessary, the food hard and the food plain but sufficiently nutritious. The boys were to remain in the institution till their Confirmation and until they had been trained sufficiently in farm work to enable them to earn in another employment at least sufficient to pay for board and clothing.

Such were the principles of the institution, and on these principles similar institutions were to be conducted in the future.

The first attempt proved, however, a great failure, and the institution was given up in 1849, partly because it had not become of much importance as had been expected, and partly because the working expenses were disproportionately heavy.

One of the teachers, D. Schmidt, had, even a long time before the "Cathrine Home of Education" was given up, left this institution in order to establish another Fellenburg institution in Jutland on "Boegildgaard", which is now the oldest of the existing homes of education for neglected and intractable children. Schmidt worked here from 1830 till his death in 1885. The farm was State property, but it was managed exclusively by the superintendent, and it was considered possible for the institution to support itself on the income of the farm and the contributions paid by the municipalities, etc., for boys placed there. The economic conditions were, however, often bad, for which reason an annual subsidy was granted to the superintendent from the year 1842.

The institution, which since 1912 has been run by the State, has now been reorganised as a State reformatory, with accommodation for 50 boys between the ages of 14 and 18 years. Besides considerable farming and gardening land, a blacksmith's shop and a joiner's workshop are provided. The best and most reliable pupils are in summer permitted to take paid service with farmers in the neighbourhood; this permission is given as a kind of consolation prize, and the children thereby become accustomed to independent life outside the walls of the institution.

Of similar institutions, the "Flakkebjerg Institution" should be mentioned. It was established in the year 1836 and has accommodation for 84 boys, who, besides ordinary schooling, are trained in farming or handicraft. As a branch of "Flakkebjerg", "Landerupgaard Industrial School" was established in the year 1867, with accommodation for 80 boys.

Attention had up to now exclusively — or at least mainly — been directed towards intractable and criminal children, for which reason almost all institutions were at first characterised as reformatories. The strong humanitarian movement which started in the nineteenth century produced, however, new ideas. Interest was now taken in the welfare of children who, though they had not begun to lead a dissolute life, were living under unhappy and miserable conditions leading them inevitably astray if not provided for in time. It was, in other words, the idea of children's homes proper which was now arising.

The first step was taken by the two distinguished child philanthropists Anders Stephansen and his wife Dorothea, who have since been called "the father and mother of the children's homes". By the assistance of Count Holstein, they succeeded in 1833 in opening a children's home on Siaeland, later called "Holsteinsminde". This was the first children's home proper in Denmark. But the time was apparently not ripe for this kind of institution, and the necessity of taking steps to introduce nursery work did not seem yet to have dawned upon people. At any rate, Stephansen was soon compelled to admit intractable children, which he did much against his will; this completely changed the character of the institution, and since that time "Holsteinsminde" has been a home of education for intractable children.

In spite of the failure of this first experiment, Stephansen's ideas spread all over the country, and his work had an inspiring effect on many friends of the children movement, but his children's home was not imitated until several years later. Such a home was opened in 1853 — the year of cholera — *viz.* "Bornoly", at Lyngby, which was founded by Queen Caroline Amalie, with accommodation for sixteen girls. Nearly ten years passed before the next home was established — "Louisestiftelsen", near Copenhagen, established in 1862, with accommodation for eight girls, to be increased to sixteen girls. The child welfare movement got no further impetus till after the war of 1864, when many children's homes were established, and a distinction was drawn between these and homes of education for intractable and felonious children. This work was, later on, taken up with great energy all over the country, and by now Denmark has in all about 150 children's homes with accommodation for about 4,000 children. Most of these are private institutions founded and maintained by small groups of people and as a rule supported by the State, the municipal or parish council and the county council. Some of them have, however, been founded by a private benefactor, as, for instance, the great institution "Jægerpris", founded in 1874 by Countess Danner, where up to 300 poor and unfortunate girls are provided for cost-free.

It was quite natural that, as the children's home movement spread, some wild enthusiasts would become involved in it. Enterprising persons who were completely unqualified to conduct a children's home would speculate on people's confidence and establish children's homes which did anything but promote the welfare of children. This was quite easy to do till a few years ago, as supervision of private children's homes was almost non-existent. This defect in the law has now been remedied, as the Act of June 12th, 1922, relating to the welfare of children councils, etc., provides that all children's homes shall be subject to the supervision of the local welfare-of-children councils, and that in future no children's home may be established without previous notification to the welfare-of-children council, which reports to the Inspector-General of the Homes of Education. Though this arrangement is not quite a satisfactory safeguard, it is practically certain that no work in children's homes can now be carried out without supervision in Denmark.

After having shown the development of the children's-home movement in its broad features, we shall proceed to deal with the second main way in which attempts have been made to assist unfortunate and neglected children — *viz.* the placing of the children in private families.

Bearing in mind the appalling results produced by the foundling hospitals and orphanages of that time, it is not to be wondered at that people shrank from gathering children in great numbers in one and the same home but preferred to place homeless children separately in private foster-homes. This way of providing for children was therefore the commonest, and was the one adopted, and always used by the Royal Maternity Hospital and Nursing Home. We must, however, not think the fate of the children placed separately in foster-homes was enviable. On the contrary, sickness and mortality among the infant foster-children were often alarming, great, and the working capacity of the older children was, as a rule, taxed to the limit by their foster-parents. Nor is it to be wondered at that the conditions were not satisfactory, as it was a general custom for children provided for by the boards of guardians to be put up for public tender and placed with the lowest bidder. The conditions of these foster-homes were not taken into consideration at all. This practice was prohibited till 1853.

The first step to improve these lamentable conditions for foster-children was, I believe, taken mainly by private individuals. "The Association for the Salvation of Neglected Children" was established in 1837 with the object "of placing children whose demoralisation may be anticipated, or which may already have begun, with trustworthy farmers or other country people in order to separate the children from their bad surroundings". This association, which has a foundation fund of one million kroner, has especially deserved gratitude for saving a great number of Copenhagen children of from 7 to 14 years.

In addition, "the Prize Association for Foster-Mothers" was established in 1840 and is still working. Its object was to encourage foster-mothers to take as great an interest as possible in the moral and sanitary welfare of children confided to their care, prizes being given to the most conscientious foster-mothers.

A general and well-arranged supervision of foster-children on the part of the public authorities only dates from the eighties of last century. In 1884-87, rules were introduced in several sanitary regulations to the effect that applications must be made to the local health committee for permission to take foster-children; most comprehensive were the rules laid down by the sanitary regulations of the city of Copenhagen, but even here the age-limit for children was fixed at seven years only. The house-owners were instructed to give particulars in the half-yearly census-papers of all foster-children in their houses; notification had to be given to the police about all matters relating to such foster-children, and the police had to keep a register of all foster parents and children.

All these endeavours to have set in order the arrangements for the keeping of foster-children by private individuals led at last to the Act of April 20th, 1888, about the supervision of foster-children, according to which any foster-child under the age of 14 years placed in a family for payment was subject to public supervision; exceptions were, however, made in such cases where the children were not taken for profit or trade. As the validity of this Act was limited to seven years, a new Act on supervision was passed on March 1st, 1895, which in its main features was in accordance with the former Act, and contained only a few exceptions; it aimed at improving the supervision of the foster-homes. This Act was in force till the end of 1923 but has now been

replaced by the Act of March 28th, 1923, relating to the supervision of children, which came into force on January 1st, 1924.

Before dealing with the separate provisions of this Act, the efficiency of which we cannot yet estimate, it is my intention to give a brief summary of the working of the Act of Supervision of 1888, and the Act of 1895 by which it was replaced.

The most important provisions in these Acts are as follows :

Permission to have a foster-child is given separately for each child by the local council (town or parish council) and may not be given until a declaration has been obtained from the supervising body ; such permission may not be given to persons in receipt of parish relief. The local council reports to the superior authority on the supervision arranged, and the supervisors give an annual report to the local council on their work during the past year and on the condition of the foster-homes supervised. The foster-parents notify the local council of any removal, of the cessation of the fostering or the death of a child, or for some other reason, and a complete register of all foster-children placed for payment within the municipality is kept and particulars given to the supervising body. The authorities may further demand that the supervision be extended to children adopted by their foster-parents as their own children and to children adopted for payment. The local council is entitled to exempt from supervision foster-children supervised by humanitarian societies in which the council has confidence. As regards the supervision, the Act contains the following rules : in municipalities having more than 30,000 inhabitants the supervision may be vested in the local health committee if the rules about supervision of foster-children contained in the sanitary regulations of the municipality in question are considered to be satisfactory by the Department of Justice ; in all other municipalities the supervision is delegated to one or more suitable persons whom the local council secure to undertake this work.

These Acts certainly mark great progress, but of course, their efficiency depends on the supervision, which has varied greatly in the different municipalities.

The best results have been obtained from the municipalities in which the supervision has been vested in the local health committees as it has there been exercised in close contact with the official physicians and has therefore been of a sanitary and hygienic character. This has been the case in the following four great municipalities : Copenhagen, Frederiksberg, Odense and Aarhus. I shall only deal with the way in which the Act has worked in Copenhagen.

The sanitary regulations in force for the municipality of Copenhagen have made the supervision include all children under 14 years of age placed in families for payment, whether the children have been born in or out of wedlock. Children who are placed in families for nursing during the day for payment are also subject to supervision. There is no supervision of the child if the mother and child are living together in a family as lodgers, even if the mother is away for work in the day. If the father and child are living together in a family as lodgers, the child is subject to supervision, as the mother under such circumstances cannot as a rule supervise effectively the nursing of the child. The supervision includes all children adopted by the foster-parents as their own children and children adopted for payment.

No foster-home is approved of until it has been thoroughly examined to see that the sanitary conditions, the health of the foster-mother, her ability to take care of children, and her economic conditions are satisfactory.

Permission is as a rule only granted for one or two children, of whom only one must be under two years of age.

The supervision of the foster-child is exercised by paid supervising ladies, who are instructed by the official physicians. Foster-homes with children under nine months are supervised at least once a week, homes with children between nine months and two years at least once a fortnight, homes with children between two and seven years once a month, and homes with children above seven years of age every three months.

As the supervision is also intended to instruct and help the foster-mothers, it is considered of great importance that the supervising ladies should be well trained in nursery work.

Copenhagen has taken up the work sensibly and spared no pains to protect the foster-children, but has seen the successful results of its efforts. The standard of the foster-homes has been raised considerably, and the frequent visits of the official physicians and the supervising ladies in the foster-homes have helped to spread the knowledge of rational child-nursing in a number of homes in Copenhagen. Last, but not least, the notorious "professional" foster-mothers, in whose homes children died by scores, and always from "innate disabilities (!)", have practically disappeared.

The mortality figures among foster-children in Copenhagen from 1888, when these measures were introduced, have shown a great decline, as the following figures demonstrate.

Rate of Mortality.

	1888-92	1893-97	1898-02	1903-07	1908-12	1913-17	1918-22
Foster-children of all ages.....	13	8	7	5	4	2	1.3
Foster-children of less than one year....	40	37	29	22	16	12	9

The mortality among the foster-children in Copenhagen has, in the 35 years in which the supervision has been in operation, declined from 13 per cent to 1.3 per cent, and the mortality among foster-children of less than one year, which in 1888 was as high as 40 per cent, has during the same period declined to 9 per cent.

The supervision of foster-children in Frederiksberg, Odense and Aarhus has been vested in the local health committees, and has accordingly had a hygienic and sanitary character in these towns as well as in Copenhagen. In the remaining provincial towns the supervision has been vested in the local councils and exercised on their behalf by

men or women who were induced to undertake this work, and naturally the supervision in the various towns has been arranged on very different lines. Supervision by the police of the foster-homes and the conditions of the foster-parents has been prescribed in a few towns only, and it is exceptional for application to be made to the official physician for a declaration about the sanitary conditions of the foster-home, the health of the foster-parents and about the foster-mother's ability to nurse children. Training in child-nursing has never been demanded, and but few towns have laid down rules and regulations for the supervision, and the supervisors have almost always been unpaid. Under such circumstances, it has, of course, proved impossible to obtain the same favourable results as in towns with a definitely planned hygienic supervision, but in any case the Act has undoubtedly put a stop to many irregularities in these towns.

The same rules apply to the supervision of foster-children in the rural districts as in the provincial towns. But, while the conditions in the foster-homes are known to some extent in the municipalities, this has not been the case in the parishes, as the official physicians in about half of these seem to possess slight knowledge of the conditions in the country, and in many cases only at second hand. This is because the parish physician, in a great number of cases have been very reluctant to give the official physician a list of foster-children in the parish in question. He has therefore been unable to exercise the supervision to which he is entitled by the Act. Moreover, the foster-homes have in no case been subjected to supervision by the police: there has been no regulation for the supervision, no requirement of any knowledge of child-nursing, and the supervision in all cases has been unpaid, so that it is easy to understand why the beneficial effects of the Act of Supervision have in many places been extremely questionable. The conditions seem to have been best in the parishes where the supervision of the foster-children has been entrusted to private humanitarian institutions. From medical statistical sources no particulars can be gathered, as, unfortunately, the exact number of foster-children in the parishes is not yet known, but the new Act of Supervision will probably mark a new era in this domain as well.

Before giving an account of the two new "Children's Acts" now in force, I propose to give a brief summary of the most important features of the child-welfare movement in this century in Denmark.

The humanitarian movement, which in the nineteenth century swept over the country like a huge wave, with the result that child-welfare in this country was directed on new and better lines, has received a further impetus and has been focussed on child welfare to such an extent that the twentieth century has been named the "child's century". Numerous institutions for the welfare of children and the rising generation have also seen the light in recent years, not only in Copenhagen but also in the provincial towns and the country. These institutions are: children's homes (*Børnehjem*), detention homes (*Oplagelseshjem*), mother-homes (*Modrehjem*) and similar institutions, where the child is provided for day and night, day homes for infants (the so-called *væddes*), infant schools (*Asyler*), working-rooms for children (*Arbejdssluer*), and kindergartens (*Børnehaver*), where care is taken of the children during the day while the mother is at work; and societies assisting children in poor circumstances, distressed mothers

and children with food, clothing and contributions in money, or by providing for the child in another way.

In this grand child-welfare work it has been more and more realised how important and valuable it is to provide for the welfare of the child in such a way that mother and child may remain together and live in such conditions that the mother is enabled to nurse her child wholly or partly. To attain this object three ways are provided, viz. mother-homes, crèches and breast-feeding controlling stations (*Diegivningstationer*), and all these three forms of child welfare have become more and more common in latter years.

Of mother-homes, there are now thirteen, with accommodation for 187 mothers and 375 children. As a model home may be mentioned the mother-home "Danmark" founded by Princess Helena, which was opened on July 1st, 1923, with accommodation for 12 nursing mothers and 48 children under the age of two. This home trains young girls in ordinary child-nursing.

Crèches have, as a matter of course, existed for many years, but formerly they were only too frequently the hotbeds of severe epidemics with great mortality. Happily a great change has recently occurred in this respect, thanks to the great progress in child hygiene, and good and properly arranged *crèches* are now found in several towns in this country. The municipality of Copenhagen has taken the lead by establishing several standard day homes for infants-in-arms, which are all under the charge of well-trained child nurses and supervised by physicians in the employ of the city.

The Health Committee of Copenhagen, in concert with the Danish Pediatric Society, has drawn up a regulation for *crèches*, which must be strictly complied with by all persons who wish to establish *crèches* within the territory of the city.

As regards the breast-feeding controlling stations, such institutions are found in Copenhagen only, where the "Co-operative Charity Councils" (*de samvirkende Menighedsplejer*) since 1908 have established eight so-called "establishments for the relief of breast-fed infants" (*Borneplejestationer*) situated in the different slums of the city. In establishing these institutions, a different principle has been followed from the one fundamental for *gouttes de lait* and *Sauglingsforsorgestelle* in other parts of the world, as, in order to promote breast-feeding, care is only taken of breast-fed infants and infants on *allailement mixte*, while infants who are wholly hand-fed are refused. In these institutions, where both married and unmarried women are admitted, the nursing mother presents herself every week or every second week with her child; the latter is then weighed and examined by the physicians attached to the institutions, and the mother is given full instruction for the care and nursing of the child. Every mother presenting herself regularly and complying with the rules given will, provided she is destitute, receive one litre of milk a day, and, if necessary, her dinner and baby's clothing; the milk is, as a matter of course, not intended for the child but only for the mother in order to increase her own milk. The nursing sisters and nurses employed at the institutions, in order to render further assistance and exercise control, from time to time visit the homes of the children. From 1908 till the end of 1922 the institutions have attended to 9,995 children in all, of which only 201 (or 2 per cent) have

ed — figures giving a better illustration than any words of the importance of the work of these establishments for the relief of infants.

I would mention a short popular treatise on nursing and nutrition of infants-in-farms, issued by the National Board of Health, which is distributed by the midwives to destitute child-bearing women.

This century has witnessed the establishment of a number of different independent and proprietary institutions for child welfare which have all approximately the same object. That this is dangerous, and apt to result in waste of money and energy, has long been realised, and attempts have therefore been made to organise and centralise charity work in various ways. In 1901 a "Danish Children's Homes Association" (*Dansk Børnehjemsforening*) was established, partly to interest people in the work of the homes, partly to act as the organ of the children's homes in their dealings with the Government, Parliament and other authorities, partly to promote co-operation between the different charitable institutions and to be a link between the different children's homes and the mothers who want to place their children there. The "Child-Welfare Joint Council" (*Børnesagens Fællesraad*) was established in 1903 to promote co-operation between the different child-welfare associations and to accomplish work common to these. It publishes the *Child-Welfare Journal* (*Børnesagens Tidende*) which, appears every fortnight and is distributed free to all the welfare-of-children councils of the country — about 1,350 in number. "The Co-operative Danish Societies for Foster-homes" (*Fællesorganisationen for de danske Plejehjemsforeninger*) comprises 39 associations and societies, all independent as far as their interior management is concerned, and possesses detention home, children's homes, *crèches*, kindergartens, etc., which provide for more than 4,000 homeless, neglected or intractable children at an expenditure of some 1½ million kroner a year.

We are now approaching the question as to the way in which the large sums required for child welfare work have been procured.

The State and the individual municipalities have had to make substantial contributions, but private charity has borne the brunt of the expense. A number of small institutions have for many years been existing on annual contributions from residents interested in the question, supplemented by various foundations and some support from the town, parish or county council. As private charity was taxed to an increasing extent, it became more and more difficult to find the sums required by the great number of humanitarian institutions. This gave the impetus to an idea, conceived by the Danish physician Johan Carlsen, urban medical officer, of establishing the so-called Children's League-of-Pity Day" (*Børnehjælpsdag*), which was celebrated for the first time in Copenhagen on May 6th, 1904, and which has been repeated every year since then. The whole town is decorated on that day in honour of the children; the different charitable institutions pitch their canvas booths all over the town, at which all sorts of articles are sold, processions pass through the streets, and bazaars, tombolas, concerts and theatrical performances compete in untying the strings of people's purses. From the proceeds of these "days", two million kroner have been distributed among charitable institutions within the territory of Greater Copenhagen. A number of provincial towns have followed this example and instituted similar "days", and the idea has also gained ground in various great towns abroad.

Another Danish idea which has spread to foreign countries is the so-called "Christmas Stamp" (*Julemærke*), the father of which was the Danish postmaster Einar

Holboell, which was instituted at Christmas 1904 and has been repeated every year since then. It consists in an artistically designed stamp of a value of 2 øre, which is sold from December 1st till January 6th at all post-offices and placed on postal transmissions; up to the present the proceeds of the sale have been some 200,000 kroner every year. The proceeds have been used partly for the construction of a great sanatorium for tubercular children, "Julemarkesanstalt ved Koldingfjord", which has accommodation for 158 children up to 15 years and has been transferred to *Nationalforeningen for Tuberculosisens Bekaempelse* (the National Union for the Campaign against Consumption), and partly for the construction and working of three so-called *Julemærkehjem* (Christmas Stamp Homes), convalescent homes with accommodation for 65 boys and girls between 3 and 15 years, besides great donations of money which have been made several times to various humanitarian institutions.

A collection which every year yields considerable amounts is made up in nearly all churches of this country at Christmas for child welfare.

The Department of Justice has permitted some of the great humanitarian institutions to sell a stamp at 10 øre on a fixed day all over the country, and the amount realised goes to the institution concerned.

Can the benefit derived from all these endeavours to promote the welfare of the children be estimated? When put in that direct way, the question must be answered in the negative as a great number of factors interfere and become concurrent motives which makes it impossible to say what is directly due to child welfare and what to quite other factors. The figures, however, in the medical statistics relating to the mortality of children during recent years, when compared with those of former years give some indication. The rate of mortality in the first five years of life and the difference in the rates of mortality of legitimate and illegitimate children throw considerable light on the question. Some of these figures are quoted below:

DEATHS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN THE KINGDOM
OF DENMARK

(the Faroë Islands excluded).

Year	Deaths below 1 year per 1,000 born alive.	Deaths between 1 and 5 years per 1,000 born alive.
1860	135.6	81.8
1875	154.0	68.9
1890	132.8	71.1 ¹
1900	128.4	35.0
1910	102.2	22.6
1920	89.6	23.5 ²
1922	85.1	17.5

¹ The increase is due to diphtheria.

² The increase is due to influenza.

This table shows that the mortality among children in their first five years of life has decreased to such an extent in this century that for the year 1922 Denmark is able to register a very low rate of mortality, viz. 8.5 per cent in the first year of life and 1.8 per cent in the age 1 to 5 years.

It can hardly be doubted that the great work for the welfare of children in this country during recent years has contributed greatly to this result. As, however, it may be presumed that the provisions made for the welfare of children will first benefit children born out of wedlock, it may be of interest to see whether the mortality has increased to a greater extent among these than among children born in wedlock.

DEATHS IN THE FIRST YEAR OF LIFE PER 1,000 BORN ALIVE.

In the towns.				In the rural districts.		
Year	Legitimate	Illegitimate	Illegitimate as compared with legitimate	Legitimate	Illegitimate	Illegitimate as compared with legitimate
1916	101	160	1.58	85	186	2.19
1922	82	107	1.31	81	133	1.64

This table shows that the mortality among children born out of wedlock has decreased proportionately more than the mortality among those born in wedlock — a fact which becomes even more conspicuous when considering the figures which apply to Copenhagen alone.

DEATHS IN COPENHAGEN IN THE FIRST YEAR OF LIFE PER 1,000 BORN ALIVE.

Annual average	Legitimate	Illegitimate
1881-95	168	341
1886-90	174	322
1891-95	163	265
1896-1900	151	237
1901-05	135	215
1906-10	112	178
1911-15	91	127
1916-20	83	105
1921	62	81
1922	74	89

The mortality among children born out of wedlock, which in the eighties was twice as high as the mortality among those born in wedlock, has decreased to such an extent recently that the two rates of mortality are approaching each other rapidly. This considerable improvement in the position of the illegitimate children is certainly to a great extent the direct result of the work for the welfare of children in Copenhagen, and the contribution which Copenhagen has made towards child welfare has accordingly not been in vain.

The two Acts now in force regarding the welfare of children, which are both of a recent date that it is impossible to judge of their effects, are the Child Welfare Act which came into force on January 1st, 1923, and the Act relating to Supervision of Children, which came into force on January 1st, 1924.

By the Child Welfare Act, every municipality or parish in Denmark constitute a child-welfare district. The Department of Justice may, however, divide a town or at least 10,000 inhabitants or a parish into several districts.

In the parishes, the child-welfare councils consist of five members, elected by the parish council, *viz.* at least one member of the parish council and the remaining members from among persons resident in the district. The child-welfare councils in the towns consist of seven members elected by the town council, *viz.* one member qualified for a judgeship and six members selected from among persons resident in the district. The council in Copenhagen, which is divided into some twenty districts, consists of a chairman and a deputy-chairman, who are both qualified for a judgeship, and four times as many members as the number of districts plus four additional members. While the chairman and deputy-chairman are appointed by the Minister of Justice for a period of eight years, the other members are elected by the Copenhagen Town Council, *viz.* four district guardians for each guardian district for a period of four years. All the district guardians then elect four members, who, together with the chairman and the deputy-chairman, constitute an executive committee. To the child-welfare council in Copenhagen there is attached an office managed by a head clerk graduated in law and having the necessary skilled assistance, including at least one permanent physician, but these experts only act as advisers.

Besides the child-welfare councils there is a Superior Child-Welfare Council, consisting of a chairman, qualified for a judgeship in the High Court and appointed by the King, one member elected by the Minister of Justice, two members elected by the "Rigsdagen", and the Inspector-General for the Homes of Education.

The Act attaches much importance to the representation of the legal experts in the councils. Presumably this is a consequence of the fact that in this country there are no children's law courts, but it is to some extent the councils themselves that give judgment in the cases. Opinions differ as to whether this is a satisfactory arrangement. At any rate it cannot be denied that a good many people have hitherto looked upon the councils only as law-courts, whose intervention was accompanied by disgrace and punishment. Nor is this to be wondered at, for ever since the introduction in this country of the child-welfare councils in 1905 it has been the principal business of the councils to provide for and look after criminal and morally depraved children. It is, however, to be hoped that the new Children-Welfare Act will be able to increase confidence in the

stitution and help to establish in people's minds the view that the councils have not come into being in order to judge and punish but to defend and protect the children and guide the parents. For the attainment of this object it would certainly have been better if, besides the legal experts, other skilled assistants (physician and educator) had been allowed seats in the council, and it is much to be regretted that the Legislature has not been alive to this fact.

With regard to the actual practice of the provident care of children, there are, according to the provisions of the law, two methods open to the councils — *viz.* removal of the children from the home or introduction of a special control at the homes.

If the welfare of the child requires it, the council can decide on the definite removal from the home of a child under 18 years of age if the child has proved to be of a particularly difficult disposition or has been guilty of very bad conduct; if the child, owing to depravity or gross negligence on the part of the parents, is deemed to be exposed to depravity or neglect; and if the child is ill-treated or treated in such a manner that its moral or physical health or development is exposed to serious danger.

Decision as to the final accommodation of a child outside the home must, however, not be taken until a physician has examined the child and made his declaration regarding it on a form prescribed for this purpose. Further, the Act provides that, if the circumstances require it, the council may summon the teacher, the rector or the physician to appear personally before the council.

When a council has decided upon the definite removal from the home, the person acting as guardian may appeal to the Superior Council, which then either confirms or annuls the decision of the council.

For the other mode of procedure : " provident care of the child without removal from the home ", the Act provides that, when intervention is deemed necessary for the welfare of the child, but when removal from the home is not justified, the council may either give the parents a warning or give them positive instructions regarding the care and education, or appoint a visiting guardian for the child.

In the latter case the council appoints the person in writing and gives instructions regarding his work. For girls and boys under seven years of age a woman is as a rule appointed. The parents may appeal against these decisions of the council, and the appeal goes to the Superior Council.

With regard to the accommodation of children whom the council has decided to move from the home, the Act contains the following provisions :

Children under 14 years of age who cannot be considered morally depraved or of particularly difficult disposition are as a rule accommodated singly with a family, and the supervision of children accommodated in such foster-homes is exercised by a visiting guardian appointed by the council.

Delicate children or children whose accommodation in foster-homes owing to special circumstances is expected to meet with difficulties, as well as children for whom it is deemed of special importance for instance, brothers and sisters — are accommodated in children's homes.

Children who are morally depraved or of a particularly intractable character, and specially children whose admission to the ordinary schools may be considered to have bad influence on other children, are as far as possible placed in an industrial school.

Children above school age as a rule enter employment or are apprenticed to a trade or employed in a similar manner according to their aptitude, faculties and other

qualifications if they cannot be deemed to be morally depraved or of a particularly intractable character ; otherwise as far as possible they are placed in a reformatory.

The children's homes, industrial schools and reformatories in which children are accommodated according to the Welfare-of-Children Act must be duly licensed by the Department. The licence is granted, on the recommendation of the Inspector-General for the Homes of Education, by the Minister of Education, who also approves the general rules for the organisation, management and managing committee, etc. of the homes. This approval may, however, at any time be cancelled. During the stay in such homes the children are subject to regular medical attendance, the expenses of which are defrayed by the Exchequer. The minimum requirements for this medical attendance are as follows :

Children under 1 year of age are attended to once every week, children between 1 and 2 years of age once every fortnight, children between 2 and 5 years of age once every month, and children between 5 and 14 years of age once every three months.

According to the Act, the local supervision of the approved children's homes is exercised by the child-welfare council in the district in which the home is situated. However, in view of the fact that the hygienic and medical experts have no seat in the council, it is unfortunately to be feared that this supervision will often be rather worthless, but it is to be hoped that this drawback will be remedied to some extent, as the superior supervision of the homes as well as the superior management of child welfare has been put into the hands of the Inspector-General for the Homes of Education. According to the Medical Officers Act, it is incumbent upon the medical officers to supervise the sanitary conditions of all children's homes in their districts.

Besides the licensed homes, now 112, with accommodation for 2,632 children there are some unapproved children's homes — at present, I believe, 33, with accommodation for 1,108 children. Formerly these homes might be established and carried on without any control whatever, and it was therefore impossible to avoid the gross abuses which happened now and then. Fortunately, the new Act relating to child-welfare councils has put a stop to this, the supervision exercised by the child-welfare councils and the Inspector-General having now been extended to include the unapproved children's homes, and no home of this kind can be established in future without notice being given. Furthermore, at the request of the National Board of Health, a provision has been inserted in the Act to the effect that the Minister of Justice is entitled to lay down rules for the medical attendance of children accommodated in such homes and to issue directions safeguarding the health of the children and preventing the spread of contagious diseases among them. Some of the rules and directions issued for this purpose are as follows :

No child may be accommodated in such homes unless it is proved by a medical certificate, issued at most four days prior to the admission, that the child is not suffering from any contagious disease and that such diseases, as far as the doctor is aware, do not exist in the home from which the child comes.

In case of death in such homes the death certificate is issued by a doctor. Every death and every case of contagious disease in such homes is notified at once by the doctor attached to the home to the local medical officer and information given as to the cause of the death, *resp.* the nature of the illness.

The manager of the home, assisted by the doctor attached to the home, keeps a journal in which all circumstances concerning the physical development and state of health is recorded for each child.

Each child has its own bed, towel, washing-cloth, and tooth-brush, and, as far as possible, its own water-basin, comb and hair-brush, and these things are conspicuously marked and placed in such a manner that mixing of the things belonging to the various children is prevented.

It must be possible to bath the children in a heated room, and homes for children under two years of age must have at least one bathing tub for every 10 children.

The directress of such homes must be skilled in child-nursing and be given adequate and skilled assistance. In homes which are intended for the accommodation of children under one year of age, at least one person must be employed who possesses sufficient training in infant nursery work.

Homes which accommodate children under one year must as far as possible be able to admit wet-nursing mothers.

The dormitories must never be of smaller cubic capacity than 8 cubic metres for each person sleeping in the room, whether an adult or a child. A greater cubic capacity may be required according to circumstances — in no case, however, more than 12 cubic metres per child.

In all homes which accommodate children over two years of age, one or more rooms of suitable dimensions must be provided for the accommodation of the children during the day.

Washing and drying of napkins or other washing must not take place in the dormitories or day-rooms of the children.

In homes with more than 10 children a room must be provided for the isolation of children in case of sickness.

It may be required that homes which admit children under one year of age shall have, besides the ordinary kitchen, a room intended for the handling of milk and milk-bottles, and that special arrangement be made for the preservation of the milk.

All such homes should have a garden or playground fit for the accommodation of the children, and children not prevented by sickness should as far as possible be sent out into the open air every day.

There are other rules and regulations, but those mentioned will be sufficient to show the lines which have been followed to provide against sickness and mortality among the small inmates of the children's homes.

The Act relating to the supervision of children did not come into force until January 1, 1924., and consequently remains a blank page.

While formerly the public supervision only comprised children placed in families for payment, it has now been enlarged considerably by the new Act and comprises :

(1) All children under 14 who have been placed in a foster-home or for day-nursing for payment, whether the child was born in or out of wedlock, or whether public contributions are made towards its maintenance or not. A child is considered placed in a family for payment even if it, for instance, is placed in the home of its grandparents for payment, or in the homes of other near relatives, and even if the payment does not cover the cost of its maintenance. The foster-homes may, as far as all these children are concerned, at the discretion of the supervising authorities, in every

single case be exempted from supervision when there is no question of trade or profit or when the supervision of the children is executed by any child-welfare institution duly authorised by the State.

(2) All children born out of wedlock till the end of their seventh year not provided for by the authorities.

(3) All children under 18 years not provided for by the authorities, but for whose maintenance a contribution is advanced by the authorities, *i.e.* children born out of wedlock on whose behalf the authorities advance the allowance payable by the father, and children of deserted, partially divorced, or divorced wives for whose maintenance the authorities advance the allowance payable by the father.

In the cases dealt with under 2 or 3, the supervising authorities may at their discretion in each separate case exempt the children from supervision when circumstances warrant such exemption, such as when they are of the opinion that the child is living under good, moral, sanitary and economic conditions in the home.

The supervision may be extended to include :

- (a) children under 14 placed in foster-homes free of charge ;
- (b) adopted children for which payment is made under 14 years ;
- (c) children born out of wedlock at an age varying between 7 and 14, even if they are not placed in a family or do not receive maintenance-contributions from the authorities.

The number of children supervised is therefore considerable. Great progress has beyond any doubt been achieved, but it all depends on how and by whom the supervision is exercised. The law here provides that the supervision shall be exercised by the municipal corporation, which may either exercise it through its own members or delegate it to a duly licensed child-welfare association, or appoint special supervisors. In the latter case the law provides that it is the duty of a citizen to exercise this office of supervisor ; a person who has been a supervisor for four years may, however, resign office and is not bound to accept office again until another four years have passed ; no person over 60 is bound to accept office. It is acknowledged that the supervisors should preferably be women, especially in case of supervision of small children.

It is obvious that the efficiency of the supervision will depend on whether it will be possible to find persons competent to exercise the supervision, which will not always be easy. It should also be born in mind that while the dangers for a child of school-age are mainly of a mental nature, so that the supervision primarily should be educational, the main danger for children under seven years of age will lie in physical defects for which reason the supervision should be mainly sanitary and hygienic. Unfortunately, legislature seems to have paid no regard to this obvious distinction, to judge from the wording of the Act, but this defect in the law will, it is to be hoped, be remedied to some extent by a circular issued by the Department of Justice, simultaneously with the coming into force of the Act, to the effect that the supervisor, besides visiting the

child regularly and rendering the mother advice and assistance, shall see that medical advice is taken if the child does not progress, is delicate, or if it is to be feared that it is suffering from some disease. The supervisor may further, if necessary, apply to the local medical officer of health for advice and assistance. The same circular says that the supervising authority should try to come to an agreement with the local medical officer of health as to the method of supervision of foster-homes", and the Department of Justice calls the special attention of the supervising authorities to the fact that, in all cases where it is considered of importance, a close co-operation must be established with the local medical officer of health. This may be taken as a guarantee that the hygienic and sanitary requirements, without which the Act is of no avail, will be met.

The supervising authority is in the first instance vested in the town or parish councils, but may with the approval of the Ministry of Justice be referred to the child-welfare council, and the latter has in such case been instructed, when supervising the children, always to make it clear whether its decisions are founded on authority given by the Act relating to the child-welfare councils or on authority given by the Act relating to supervision of children. But even if the supervising authority has not been referred to the child-welfare council, a close co-operation should always be established between these two.

The Act contains the provision that the supervision in municipalities with at least 10,000 inhabitants may be referred to the health committee if the municipal corporation desires it and if the Minister of Justice agrees. A corresponding arrangement may also be made under special circumstances in municipalities with less than 10,000 inhabitants.

With regard to the placing of a child in a foster-home, the Act provides that no person shall be entitled to receive or have any foster-child under 14 years in his (or her) home — whether for payment or not — or to engage in day-nursery work for payment without having obtained a permission to this effect from the supervising authority. Such permission is as a rule only given to families where both husband and wife are alive and not above 55 years of age, and where not more than three unconfirmed children are living in the home. Single women may, however, be permitted to receive girls, and, as a rare exception, boys, specially infants. The permission is given in writing for each separate child and may be revoked at any time. The permission has to be returned if the fostering ceases. It rests with the person who has obtained permission to have a foster-child to inform the supervising authority immediately the child has arrived, if it should die or if the fostering should be discontinued for other reasons, also in case of change of residence.

The supervising authority may exempt homes which have obtained permission to have a foster-child from supervision when there is no question of profit or trade or when the supervision is exercised by a duly licensed child-welfare association.

Space does not permit me to deal with all details of the Act, but I will mention a new regulation which I hope will prove effective. A midwife (or physician acting as a midwife) who has assisted at the birth of a child born out of wedlock must within three days following the delivery give a report of this to the supervising authority at the place where the child was born.

The report must contain full particulars of the name, occupation and permanent or temporary residence of the mother, the place and date where and when the child was born, its sex, also the way in which it is to be provided for. If no midwife or physician

has assisted at the birth, it rests with the mother within three days following the birth to give the supervising authority this information.

The supervising authority must, immediately it receives the report, make an examination of the conditions of the mother and child and see that the child is subject to supervision in conformity with the rules in the Act. If, according to the report it is the intention to provide for the child in another municipality, the supervising authority at the place where the child was born must inform the supervising authority at the place where it is the intention to provide for it and at the same time give it particulars in its possession relating to the child. It rests with the mother of a child born out of wedlock and subject to supervision under this Act, to give immediate information to the supervising authority if the child dies or when it changes residence.

The supervising authorities must, for the purpose of centralising this supervision give a report in the month of January every year to the Inspector-General of the Home of Education about the supervision during the past calendar year, together with statement of the number of children under supervision and the permissions to have fosterchildren granted in the course of the year, etc.

These two Acts — the one relating to child-welfare councils, the other to supervision — show the lines along which public child welfare will be conducted in Denmark in the years to come. It is an open question whether the lines followed will lead to the desired goal — good and adequate provisions for the outcasts of society.

THE SANITARY ORGANISATION OF THE CITY OF COPENHAGEN

BY DR. I. P. CHROM,
Chief City Medical Officer of Health.

SHORT HISTORICAL SURVEY.

As early as the middle of the sixteenth century, there were doctors paid by the public funds in the towns of Odense and Viborg. Their duties were, however, limited to the care of the sick, and there seems to have been no medical officer in Copenhagen till 1636, the duties of the officer appointed in that year being also limited to the performance of the ordinary duties of a physician. It was not till the last years of the eighteenth century, a period rich in important sanitary reforms, that the medical officer was given more extensive duties, more especially in his capacity of member of the Quarantine Commissions which were at that time appointed in Copenhagen and in the seaport towns, and which gradually developed into Health Committees with more comprehensive duties, more especially as regards infectious diseases. During the cholera menace of 1831 and 1832, such Health Committees were established by law in the country districts also, so that a public sanitary organisation was already in existence all over the country when, by the Permissive Act of January 21st, 1858, sanitary regulations were established in all municipalities which chose to avail themselves thereof. Copenhagen was given its first sanitary regulations on October 26th, 1860, but before that time a large number of Acts and regulations concerning sanitation were in force, the most important being the Noxious Trades Act of March 10th, 1852.

These sanitary regulations, to which several additions were subsequently made, were superseded by a more comprehensive set of regulations on June 15th, 1886, which in their turn have been supplemented, and at various times were superseded, by the regulations of November 4th, 1918, which are still in force.

The supreme direction of the national sanitary organisation originally rested with the Medical College established by Order in Council of April 9th, 1740, the responsibility being shared, from 1785, by the Academy of Surgeons established in that year, till the Royal College of Health was established by Order in Council of May 13th, 1803. While the municipal medical officer of Copenhagen had been an ex-officio member of the Medical College, he had a seat in the College of Health only when expressly appointed and was subject to the official control of that body like any other physician, his duties being, however, defined by special instructions of March 23rd, 1813.

In 1857, an Act to reform the municipal government of Copenhagen was passed. This Act provided for the appointment of a Chief City Medical Officer of Health (Stads-lege) in place of the municipal medical officer. The Director was to have certain

municipal duties, but, in addition, he was to remain, like the municipal medical officer a Government official, with the same Government functions as the latter, the instructions of 1813 remaining in force. The position of the Chief City Medical Officer of Health, who thus combines municipal with State functions, was not affected by the Medical Officers Act of April 21st, 1914, the only additional provision being that he must have passed the examination prescribed for medical officers.

THE PUBLIC HEALTH SERVICE.

The organisation of the Public Health Service, which is controlled by the Ministry of Justice and the National Health Committee (*Sundhedsstyrelsen*¹), is thus somewhat complicated. As far as the City of Copenhagen is concerned, the Chief City Medical Officer of Health is the supreme authority, in his twofold capacity of member of the City of Copenhagen Board of Health (which supervises the working of the sanitary regulations mentioned above) and of chief medical officer of the city, in which capacity he combines both State and municipal functions.

The sanitary regulations of November 4th, 1918, are grouped under various heads. A summary of the most important provisions of each section not treated separately elsewhere (such as milk and meat inspection) is given below.

Section I. — This section deals with the members, staff, and procedure of the Health Committee (*Sundhedskommissionen*). The Committee consists of the following members: the Chief of the City Police, who is *ex-officio* chairman; the Mayor in charge of the Fourth Division of the Municipal Administration; the Chief City Medical Officer of Health; and two members of the Town Council elected for four years by the Council, one of them being a building expert. The Health Committee has no authority to grant exemptions from the provisions of the sanitary regulations: such exemptions can only be made by the Minister of Justice on the recommendation of the Town Council. In case of epidemics, the Health Committee may delegate part of its authority to local committees for the individual parts of the City presided over by doctors serving as medical officers of health. The secretary of the Committee is the third Inspector of Police (who must have taken a law degree). The latter controls the sanitary police, and it is his duty to supervise the carrying out of the sanitary regulations according to instructions received from the Chief of Police. For this purpose, he is entitled to employ the sanitary police and such of the constabulary force as he may require.

Section II: The Drainage System. — The city drains are under the management of the Fifth Division of the Municipal Administration as far as the technical aspects of the matter are concerned. The Health Committee can only interfere if the condition of the house drains is unsatisfactory from a sanitary point of view or such as to constitute a danger to public health. The Committee is entitled to insist that all drains must be covered and so constructed that leakage cannot take place. In cases

¹ This body (*Sundhedsstyrelsen*), which corresponds roughly to the English Ministry of Health, must not be confounded with the Copenhagen Health Committee (*Sundhedskommissionen*), which controls the public health service of the metropolis.

of water leaking into a building, the Committee of Health may order the necessary excavations to be carried out, the cost being payable by the owner of the house if any drain is found to be faulty. If not, the expenses are paid by the municipality ; the Committee may order the drains to be cleaned or, if necessary, disinfected.

Section III : Public Cleanliness, etc. — Public cleanliness, the sweeping and watering of streets and roads, etc., is supervised by the constabulary, but if necessary the Health Committee may order special sanitary measures to be taken under exceptional circumstances (epidemics, etc.). Courtyards, closets, urinals, staircases, cellars and roofs must be kept clean ; if necessary for this purpose, the Committee may order repairs to be undertaken. Carpet-beating from windows or balconies is prohibited, and there must be a sufficient number of receptacles for garbage. Under certain conditions, the Board may order these to be emptied at frequent intervals. Houses must be rat-proof.

Section IV : Latrines. — As regards water-closets, see below (p.305). In cases where closets are furnished with a tank, the latter must be of metal and placed on a raised cement foundation, so that it may be cleaned and rinsed. There must be a seat for every twenty persons. In houses not provided with water-closets, latrines are removed according to arrangements made by the municipal authorities. At present, the removal has been assigned to a private company. The tanks are not emptied on the spot but exchanged for others which are empty. In urinals, the flows and the walls up to height of 1.25 metres must be impermeable to water. Every urinal must drain into sewer. Urinals in courtyards must be roofed. As regards urinals in the interior of buildings, the Health Committee may insist on more comprehensive measures, such as, e.g., automatic rinsing.

Section V : Public Nuisances. — Establishments detrimental to public health may either be commenced, nor extended, nor removed to other localities without the consent of the Health Committee. All establishments productive of noise, stench or vibration come within the meaning of this term. As a general rule, all factories and industrial establishments and all stores of malodorous substances must be constructed and worked in such a way as to cause the least possible public inconvenience. In this respect, the Health Committee may issue the necessary injunctions and prohibitions. Smoke causing public inconvenience is also prohibited ; manure must be stored in cement tanks only, and these must be covered by lids and emptied as often as may appear necessary to the Health Committee. Domestic animals may only be kept on certain conditions prescribed by the Committee.

Section VI : Articles of Food. — As regards articles of food, very comprehensive regulations are in force. As, however, both milk and meat inspection are described elsewhere, only a very brief extract is given in the following.

All articles of food are subject to the inspection of the Health Committee and may, if it appears necessary to the Committee, be ordered to be destroyed. They may only be sold unadulterated and in good condition. Persons suffering from contagious diseases or loathsome skin diseases or festering sores may not be employed

in the treatment or sale of foodstuffs. Premises where articles of food are sold must be kept clean and orderly, and the Health Committee may order premises to be closed if they are considered by the Committee to be unfit for the storing and sale of food. Dogs are not allowed on such premises. For butchers', provision-dealers' and fishmongers' shops, special regulations are in force. The walls of such shops must be tiled or cemented and of a certain specified height. Larger shops must have tessellate floors connecting with a sewer. Furthermore, they must be ventilated and well isolated from dwelling apartments. Bread and cakes may only be transported in closed carriages, and shops where such articles are sold must be furnished with notices forbidding the customers to touch the bread. Wells for drinking-water must be cemented to a depth of at least 2.5 metres and furnished with a cover and a kerb at least 20 centimetres high. If necessary, the Committee may order a well to be filled.

Section VII : Dwellings. — The Health Committee may permit a room which does not fulfil the requirements of the Building Act as to heating to be occupied for the night only. Every dwelling-room must have a solid floor. If a dwelling-room is found to be in such a condition that it can only be occupied at the risk of the health of the occupier, the Health Committee may order the necessary repairs to be undertaken or forbid the use of the room. If a dwelling is crowded, the Committee may order it to be evacuated and decide how many persons shall be allowed to live in it. A dwelling must contain at least 12 cubic metres per individual when on the ground floor or in the basement. If in one of the other stories, it need only contain 10 cubic metres per individual (a child counting as one). Every kitchen must be ventilated as prescribed by the Committee.

Section VIII : Public-houses and Doss-houses. — Concerning public-houses, a number of detailed regulations are in force. Every public-house (restaurant) must be approved by the Health Committee. If the public-house comprises one room only, this must have a floor area of at least 40 square metres ; if there are two rooms, one of them must have a floor area of at least 30 square metres. No room must have a floor area of less than 10 square metres. The height of the rooms must be at least 3 metres, and the floor must not be more than 0.3 metres below the level of the street. The aggregate area of the windows must be one-sixth of the floor area, one-third of the window area being capable of being opened. To every restaurant or public-house must be attached a kitchen with a floor area of not less than 10 square metres and a larder with a floor area of at least 1 square metre. Indoor lavatories must conform to the prescriptions of the Health Committee. Certain exemptions from the above regulations may, however, be granted.

Doss-houses, within the meaning of the sanitary regulations, are houses in which beds are let for the night, more than two persons occupying one room. The rooms must have a cubic content of not less than 8 metres per bed, but if the Health Committee sees fit it may insist on a still larger capacity. Double beds are not allowed. In doss-houses for both sexes, women may only occupy rooms to which men are not admitted.

Section IX : Schools, Orphanages and Crèches. — As to schools, see the article about Sanitation of Schools.

For orphanages and crèches, special regulations are in force, copies of which, in a French translation, will be presented to every participator in the “ interchange ”.

Section X : Infectious Diseases. — The usual regulations are in force. Information about these is given elsewhere.

Section XI : Burials. — No cemetery must be used till the plans have been submitted to the Health Committee. Mortuary chapels must be designed in accordance with the prescriptions of the Board of Health.

Section XII : Supervision of Boarded-out Children. — Children under 14 may not be boarded out without the permission of the Health Committee. A permission once granted is retracted if the treatment of the child is found to be unsatisfactory. Children must not be placed with households among the members of which there are consumptives. Children with manifest syphilis may not be boarded out at all. Children boarded out are under the supervision of inspectresses, visits of inspection being paid once a week in the case of children of less than one year of age, and at longer intervals in the case of older children. These visits may, however, be dispensed with if the Board is of opinion that they may safely be discontinued.

Section XIII : Private Maternity Homes. — The permission of Health Committee is required to receive pregnant and confined women for nursing during confinement and delivery if money is charged for the treatment. No specific regulations exist as regards maternity homes, but the Health Committee acts on the following principles: in order to bring maternity homes within the scope of the poorer classes, homes with one bed only are allowed, subject to a minimum of conditions, the only actual condition being that their furniture must be of a kind easily cleaned. Only one woman must be admitted at a time. Arrivals and departures must be reported to the Chief City Medical Officer of Health the same rule applying to cases of infectious diseases. In the case of maternity homes with more than one bed, more comprehensive measures are required in order to prevent infection being carried from one woman to another. There must be one confinement-room and one isolation-room. There must be a cloakroom and wardrobes for the reception of clothes and there must be a water-closet and good kitchen accommodation, etc. The rooms occupied by the patients must be light and airy, with a capacity of at least 25 cubic metres per bed or each woman. The furniture must be easily washed and each child and each woman must have its own separate utensils. The staff must comprise at least one trained nurse or a midwife with no practice of her own. Every case of infectious disease must be reported to the office of the Chief City Medical Officer of Health. Pregnant women, when applying for admission, must present a medical certificate to the effect that they suffer from no infectious disease.

The Staff of the Health Committee.

The Health Committee has at its disposal a staff of doctors, veterinaries and engineers, who, under the constant supervision of the Chief City Medical Officer of Health, superintend the working of the sanitary regulations.

Divisional Health Officers (Sanitetslaege).

There are four Divisional Health Officers, appointed for 6 years, with an annual salary of 6,000 kroner, who are allowed to carry on a practice of their own in addition to their official duties. Each Divisional Health Officer has an assistant appointed for three years, with an annual salary of 3,000 kroner. Like the Divisional Health Officer the assistants may have practices of their own. Each medical officer has his own special subjects, the whole of the City coming within this province. Thus the city is not (as was the case till recently) divided into districts, each under the supervision of one medical officer, this arrangement having been found unsatisfactory. If the duties of a Divisional Health Officer should for some reason become too heavy he may be allowed an additional assistant. The new scheme, according to which the work is divided into special subjects, has proved more efficient than the old one it has, for instance, given much more consistency to the decisions of the Board.

The province of the *First* Divisional Health Officer may be briefly described as the supervision of all matters relating to children (Sections IX, XII, XIII of the sanitary regulations). He is assisted by twelve inspectresses, who supervise the treatment of boarded-out children and give instructions to those in charge of them. (As regards the inspectresses, see below under Inspection of Dwellings.)

The province of the *Second* Divisional Health Officer is the sanitation of houses. He supervises the working of Sections II, IV, V and VII of the sanitary regulations.

The *Third* Medical Officer of Health supervises the food and water supply of the city, in collaboration with the veterinaries (Sections VI and VIII of the sanitary regulations).

The province of the *Fourth* Divisional Health Officer is epidemiology (Section III, X and XI of the sanitary regulations), and, in addition, the administration of hospitals for the treatment of venereal diseases. He is also in charge of the disinfection service.

Every medical officer of health has to spend an hour a day at his office at a specified time. Their offices are in the same building as those of the Chief City Medical Officer of Health. If their duties become too onerous for one man to perform, they may be relieved, either, as mentioned above, by the appointment of more assistants or by the Chief distributing some of the work among the other officials.

Veterinary surgeons.

The *First* Veterinary Surgeon generally issues all certificates and recommendations relating to veterinary questions. He is also in charge of the milk inspection.

The *Second* Veterinary Surgeon is in charge of the inspection of butchers' shops.

The *Third* Veterinary Surgeon is assistant to the others, and, in addition is inspector of the farmyard stocks in the country which supply the capital with milk. Moreover, he supervises the working of the sanitary regulations, one of his duties under this head being the supervision of the milk inspection carried out by the veterinary surgeons in country districts in accordance with the provisions of the sanitary regulations. The veterinary surgeons are salaried on approximately the same scale as the Divisional Health Officer, and are appointed for six years. The First and Second Veterinary Surgeons are allowed to carry on their own practices. They all have to

be at their offices for one hour a day and have, like the Divisional Health Officers, to pay numerous visits of inspection in the city. The meat inspection, on the other hand, is not carried out by them but by veterinary surgeons employed at the slaughter-houses who are under the direct control of the municipal authorities and have nothing to do with the Health Committee or the Chief City Medical Officer of Health. Both the inspection of slaughter-houses and the meat and trichina inspection are, however, liable, at any time, to be examined by the Chief City Medical Officer of Health.

Engineers.

The Health Committee employs a Chief Engineer, with a salary of 10,000 kroner, a Second Engineer with a salary of 6,000 kroner, and a clerk. These advise the Committee on sanitary questions of a technical nature. On the questions in which they are not sufficiently experienced and in which expert assistance appears desirable, the Committee is authorised to take the advice of experts.

The Chief Engineer is, furthermore, the head of the *Housing Inspection Service*. Houses are subjected to sanitary inspection both in a sanitary and in a social respect, chief stress being, however, laid on the technical aspect of the question. In addition to the Chief Engineer and the Assistant Engineer mentioned above, the Committee employs a male assistant who is not an engineer. The latter assists in the inspection of houses and works in the office. As the duties of this staff of engineers occupy the whole of their working day, it has been found necessary to provide the Housing Inspection Service with a secretariat of its own.

In addition, the Housing Inspection Service employs a number of persons of special experience in social works, whose duties consist in teaching housewives orderliness and cleanliness and furnishing the Inspection Service with reports on the condition of houses. If due cleanliness is not observed, the matter is generally settled by the intervention of the Housing Inspection Service. If no agreement can be arrived at, the case is submitted to the Health Committee, which is authorised to settle the matter with the assistance of the police.

The social side of sanitation is looked after by a number of persons with various duties, namely :

- (a) School nurses ;
- (b) Nurses employed at the dispensaries for the treatment of consumption ;
- (c) Municipal visiting nurses ;
- (d) Inspectresses of boarded-out children.

These persons give instructions to housewives in the houses visited, and, in case this proves insufficient, they report the house in question to the Housing Inspection Service, the report being written on a closed postcard. One a year they are summoned before the Chief City Medical Officer of Health, together with the Second Divisional Health Officer and the Chief Engineer, for the discussion of various matters. Furthermore, a brief set of instructions have been printed for their benefit. The persons mentioned above are all women ; almost all of them are trained nurses, *i.e.*, they have served for at least three years in a municipal hospital and have taken a parallel course comprising not only the practical duties of a nurse but also theoretical subjects, such as anatomy, physiology, bandaging, etc.

They are not under the direct control of the Housing Inspection Service but only informally attached to the latter, an arrangement which has proved very beneficial,

because these ladies take a keen interest in this kind of work, which is easily reconciled with their regular duties.

The school nurses are appointed by the schools (see the Sanitation of Schools). Nurses employed in the dispensaries for the treatment of consumption are appointed by the Society for Combating Consumption. There are two dispensaries, employing six nurses. The municipal visiting nurses, of which there are nineteen, are under the control of the City Hospital Service. Their duties consist in nursing patients in their homes. Their activities are very much appreciated because a large number of patients dislike being removed from their homes and can only with difficulty be spared from their household duties, while, on the other hand, there is nothing to prevent them from staying at home, provided they are properly nursed and looked after. Moreover, from the point of view of the municipal authorities, the arrangement is a very desirable one, as it prevents the hospitals from being crowded. The duties of the nurses occupy the whole of their working day. They receive an annual salary of 3,100 kroner and, in addition, their uniform and a telephone allowance.

There are twelve inspectresses of boarded-out children. As indicated by the name, their duties consist in supervising the treatment of boarded-out children less than 14 years of age. From January 1st, 1924, the scope of the inspection will be considerably extended and will be made to include, in addition to boarded-out children, illegitimate children under 7 years of age and a number of other children supported by public means. The number of the inspectresses will remain the same, but their duties will, from that date, occupy a whole working-day, instead of, as hitherto, half a working-day. It is furthermore proposed to fill these posts with trained nurses only (a principle which has already been observed in the case of recent appointments) and to pay them the same salary as the municipal visiting nurses. As the duties of the latter are of a very fatiguing and trying character, while those of the inspectresses are easy, consisting exclusively in supervision and guidance, municipal visiting nurses will have a priority claim on vacancies.

The offices of all the doctors, veterinary surgeons and engineers mentioned above are situated in the same building as those of the Chief City Medical Officer of Health who exercises a general supervision of the daily work. The procedure is as follows: a doctor, veterinary surgeon or engineer submits a written report on each case to the Health Committee, the report being accompanied by a written statement of the measures which ought, in his opinion, to be taken. The final decision is taken by the Committee of Health, by a ballot among the five members entitled to vote.

The Health Committee employs, besides, various persons whose duties are performed in other establishments than those described above. These are:

(a) Seven dispensaries, employing twelve doctors, for the treatment of persons suffering from venereal diseases. In accordance with the provisions of the Act of March 30th, 1906, these hospitals are distributed over various parts of the city and are kept open at frequent intervals in order to make them as accessible as possible. Each of the twelve doctors works independently of the others, though some of them occupy the same premises at different times. The doctors receive an annual salary of 6,000 kroner and are, of course, allowed to have their own practice. According to the Act of March 30th, 1906, persons suffering from venereal diseases are under the *obligation* of undergoing treatment, while, on the other hand, they are entitled to receive treatment and medicine free of charge.

(b) A vaccination-centre employing two doctors paid by the hour. According to the Act of February 4th, 1871, every child must be vaccinated before the age of 7. Furthermore, education is compulsory in Denmark, and it is the duty of each school

director to see that each child entered has been vaccinated. If this is not the case, the school director must report it to the police, who see that the child is vaccinated.

(c) A laboratory for the examination of foodstuffs, etc. An attempt is at present being made to reform this institution by the acquisition of premises more in accordance with modern requirements and by a reorganisation of the staff.

(d) A disinfecting staff, which carries out disinfection in the city. The present staff consists of eight disinfectors.

Having accounted for the duties and procedure of the Health Committee, it remains to describe a number of other institutions under the sole and immediate control of the Chief City Medical Officer of Health. In passing, it may be remarked that an Order in Council of November 10th, 1866, relieves the Chief of certain duties (*cf.* the official duties of Country Medical Officers), such as *post-mortems* instituted by the police authorities (these being carried out by the Institute of Forensic Medicine of the University of Copenhagen) and psychiatric certificates concerning the mental condition of prisoners, etc. (which are issued by the University Professor of Psychiatry). The further official duties of the Chief City Medical Officer of Health are of a very heterogeneous nature. They may be divided into State and municipal functions (*cf.* the introductory remarks), and the Chief receives instructions both from the Government and from the municipal authorities (the municipal instructions have, however, not yet been approved).

The State functions of the Chief City Medical Officer of Health are defined in the instructions of May 28th, 1922.

The province of the Chief City Medical Officer of Health is the city of Copenhagen, and he must have his residence within the city. As far as his State functions are concerned, he is under the direct control of the National Board of Health, to which he furnishes statements and reports (relative to epidemics, etc.). The Chief is the connecting link between the National Health Committee and the doctors, dentists, chemists, midwives, nurses, masseurs, etc., practising in the city.

The Chief City Medical Officer of Health is the expert adviser of the municipality in all matters relating to sanitation. He must be consulted in the appointment of physicians-in-chief to the hospitals, district physicians and school physicians. Plans for the establishment of charitable institutions, prisons, hospitals, orphanages, etc., must be submitted to him and reported on by him to the municipal authority, and he exercises a general supervision of their sanitary condition. Plans for the establishment of new drug-stores must also be submitted to him. He is present at the meetings of the Town Council when the sanitary regulations of the city are being discussed, and may take part in the debate, though he has no vote.

The Chief City Medical Officer of Health keeps a card index of the doctors practising in the city and sees that they fulfil the duty incumbent on them to furnish a weekly report of epidemic diseases which have occurred in their practice. On the basis of these, he furnishes a weekly and an annual report on infectious diseases.

The Chief City Medical Officer of Health keeps a card index of the dentists practising in the city and sees that they observe the provisions of the Dentists Act. This Act defines the work which they are authorised to perform and forbids them to undertake work of a medical nature.

The Chief keeps a card index of the chemists carrying on business in the city. Special statutes regulate this trade. The Chief pays an annual visit of inspection to each drug-store, accompanied by a pharmaceutical inspector, for the purpose,

among other things, of seeing that the store is properly stocked. He receives and examines complaints relating to chemists and the sale of drugs.

The Chief keeps a card index of the midwives practising in the city, and furnishes them with protocols, forms for the registration (with the vicar of the parish) of the birth of every child born alive, and forms for the issue of prescriptions (for disfectants). He sees that they do not infringe the regulations in force. He has administer reprimands in cases of infringement and may impose fines payable in the municipal funds and varying from 2 to 200 kroner. If he receives a report of case of a midwife or one of her household suffering from an infectious disease, he may take such measures as he sees fit in order to prevent the spread of the disease. The same is the case if an infectious disease is reported in a family visited by the midwife. In these cases the Chief may, if necessary, forbid the midwife to practise till the danger of infection is over. Cases of this kind must be reported to the central administration, and the midwife is entitled to compensation.

If the Chief learns, from the weekly medical reports, of the occurrence of childbed fever, tetanus neonatorum or pemphigus neonatorum, and if the midwife in question is reported by the doctor in attendance, the midwife is ordered to attend at the office of the Chief. She has to bring the bag containing her instruments, and her protocol. She is examined as to her conduct in the case in question; if any error has been committed, she is reprimanded, and she is told not to visit the patient again, and to take the necessary precautions as regards bathing and the disinfection of her bag and its contents.

Subject to the approval of the Chief City Medical Officer of Health, midwives are allowed to receive pregnant and confined women in their homes. The permission may, however, be withdrawn at any time. The Chief must be notified of arrival and departures. Furthermore, the midwife may not receive pregnant and confined women in her home except on the presentation of a medical certificate not more than four days old to the effect that the person in question suffers from no infectious diseases. If she contracts such a disease during her stay at the house of the midwife, the latter must immediately report the case to the Chief.

Judges have the right to demand from midwives extracts from their protocols relative to the state of the child when born. If the protocol has been handed in to the Chief City Medical Officer of Health because it is full, or because the midwife has died or has ceased to practise in the city, the Chief must furnish any extracts which the judges may demand.

At least once a year every midwife is summoned before the Chief. On this occasion she must bring her instruments, protocols, and schedules, and the Chief must convince himself that the midwives have a proper understanding of their duties and rights, that they keep up their professional knowledge, and that the State of their health and their mental condition is not such as to prevent them from carrying out their duties properly. He directs their attention to new legislation affecting their calling. Instruction of this kind is also given at the extension courses held every year at the City Maternity Home, to which all midwives are admitted.

According to her instructions, every practising midwife is under the obligation to attend, with the shortest possible delay, any woman in childbed to whom she may be summoned. Once she has entered the house of a woman in childbed, and once the birth has begun, she must remain in the house till the delivery and afterbirth have been

completed and till there is no longer any probability of hæmorrhage or any other danger to the mother or the child. According to her instructions she has, furthermore, to attend without securing in advance any guarantee for the payment of her fees.

Midwives in Copenhagen practise on their own account and are not municipal employees or paid from the public funds. According to the constitution of the country, anybody who is unable to support himself is entitled to receive relief from the public funds. The Poor Law provides that relief received for the payment of doctors' or midwives' fees or funeral expenses shall not constitute poor relief in the statutory sense of the word (*i.e.*, involving the loss of the municipal and parliamentary franchises). Accordingly, it has been found necessary in the City of Copenhagen, where midwives practise on their own account, to guarantee the payment of their fees. If a woman in childbed declares herself unable to pay the midwife's fees, the case is referred to the municipal authorities, which then disburse the sum. The municipal authorities stipulate, however, that the midwife must not only assist at the delivery but also that she must pay visits to the confined woman for eight days, during which period she must render her every necessary assistance and look after the child. For this the midwife receives 25 kroner for each patient.

However, it is not unusual for midwives to give assistance to women in childbed in other ways. For such cases the following tariff has been approved by the municipal authorities :

- (a) For attending on a woman in childbed and for taking her to the maternity ward of the National Hospital, 10 kroner.
- (b) For attending on a woman in childbed, for preparing her for delivery and for taking her to the National Hospital, 15 kroner.
- (c) For attending on a woman in childbed, for preparing her for delivery, for staying with her for an hour or more, and for taking her to the National Hospital, 20 kroner.

In their own practice the midwives may charge what they like.

It is the duty of the Chief City Medical Officer of Health to report to the National Health Committee any doctors, dentists, chemists, and midwives whom he considers unfit to carry out their duties without exposing the public to danger because of mental disorders or excessive indulgence in alcohol, morphia, etc., or because of incompetence. The National Health Committee in its turn recommends to the Minister of Justice that the person in question be deprived of the right to practise.

The Chief City Medical Officer of Health has to see that no doctor, dentist or midwife is guilty of illegal practices, and that no drugs are sold except under the conditions prescribed by law. Cases of infringement come under the jurisdiction of the courts.

As provided by the Factory Act of April 29th, 1913, Section 32, and the Bakeries Act of June 8th, 1912, the Chief City Medical Officer of Health has to take part in the sanitary inspection of factories and bakeries together with the factory inspectors, who are engineers. In this duty, the Chief is assisted by two medical officers (industrial sanitary officers), who are under his own immediate control (not that of the Health Committee).

Regulations issued under the above Acts define the duties of industrial sanitary officers and factory inspectors. Their work was originally concerned with purely

technical matters, such as the equipment of the buildings, the air contents of the room the occurrence of poisonous gases, etc. As long as the sanitary officers were not authorised to initiate on their own account more comprehensive investigations of the health of the workers, the inspection could not be an effective guarantee against insanitary conditions of work. The right of the sanitary officers to carry on independent sanitary investigations has, however, now been established by a decision of the Ministry of Justice (July 6th, 1922), and such investigations have now been commenced.

The Chief City Medical Officer of Health furthermore supervises all institutions in which large numbers of persons are congregated, such as prisons, hospitals, poor houses, workhouses, homes for youthful offenders, etc. This task is a very comprehensive one and must be considered very important, because it comprises a number of institutions which are not under the supervision of the Health Committee, though on the other hand, several of the institutions supervised by the Chief are also subject to the control of the Health Committee. Some institutions are, however, exempted from the supervision of the Chief, namely the Army and Naval hospitals.

As far as possible, the Chief City Medical Officer of Health must keep a list of the various institutions under his charge. Furthermore, he exercises a general supervision of sanitary matters, and, whenever his attention is drawn to anything which might prove detrimental to public health, he must do everything within his power to redress it, if necessary with the assistance of other authorities.

The Chief City Medical Officer of Health is a member of the Health Committee of the City of Copenhagen, of the Quarantine Commission and of the Housing Commission. The Quarantine Commission consists of the Chief Superintendent of Customs who presides at its meetings, the Mayor of the Second Division of the Municipal Administration, the Harbour-master, and the Chief City Medical Officer of Health. The task of the Commission is to prevent the introduction into the country of infectious diseases, its duties being defined by the Quarantine Act and various regulations issued in accordance with international agreements. The Quarantine Service employs four health officers.

The Housing Commission consists of the Mayor of the Fourth Division of the Municipal Administration, who presides at its meetings, the Municipal Building Superintendent, the Vice-Director of the Police, the Chief of the Fire Brigade, a building expert elected by the Town Council, and the Chief City Medical Officer of Health. The Committee supervises the working of the Building Act. The duty of the Director as a member of the Committee is to see that houses are kept in a proper sanitary condition and that no undue exemptions from the regulations are granted.

Of the sanitary provisions of the Building Act for the City of Copenhagen of April 12th, 1889, the following may be mentioned as the most important :

No building must have a height exceeding $5\frac{1}{4}$ of the breadth of the street, and no building must be higher than 17 metres. No building must contain more than six inhabited stories. No new street must be less than 19 metres broad. To each house must be attached an area not occupied by buildings. In the part of the city situated within the old ramparts, at least one-fourth of the total area of the premises must be unoccupied. The same applies to corner houses situated outside the ramparts, while the unoccupied area attached to all other houses must be one-third. No part of the unoccupied area must have a length or a breadth of less than 2.5 metres. Very detailed provisions are in force as regards the distance by which houses must be separated from

each other on account of the lighting of the dwelling-rooms. It would take up too much space to examine all these detailed rules here. It may, however, be mentioned that, in the case of windows of rooms, workshops, or kitchens looking on another building, the distance separating the two buildings must be at least 1.88 metres plus one-fourth of the height of the two buildings. The unoccupied area must be used as a courtyard. Permission may, however, be given to convert it into a cellar by roofing it over. The roof must be strong enough to support traffic and the cellars must not be used for the storing of malodorous substances.

Every dwelling-room — by which the law understands a room capable of being heated — must have a minimum height of 2.5 metres, a floor area of at least 5.9 square metres and a window which can be opened so as to admit fresh air. (Rooms not fulfilling these requirements may, however, be occupied by special permission of the Health Committee. Dwelling-rooms in basements are allowed only in front buildings situated in streets of a breadth of at least 12.5 metres, and only on drained soil. The ceiling of the basement must be at least 1.5 metres above the level of the street. No dwelling-room may be placed in the loft of buildings more than 16 metres high. Houses containing more than two inhabited stories (the basement counting as one) must have two staircases.

Latrines (water-closets) placed in an inhabited story of a building must conform to certain rules prescribed by the Health Committee. Of these rules the following may be mentioned : A water-closet must have a floor area of at least 0.8 square metres. The lighting may be either direct or indirect. In the first case, the window must have a size of at least 0.2 square metre, in the second case 0.5 square metre. Water-closets indirectly lighted must be ventilated by an air-shaft made of masonry, glazed stone-ware, wired cement pipes of the Rabits or Monier type or similar fire-proof material. The shaft must be at least 10 centimetres by 10 and must issue 60 metre above the roof-ridge of the house. Water-closets directly lighted must have a window furnished with a movable glass blind. The walls of the room must be painted up to a height of at least 2 metres. In the case of latrines without water action, there must always be a ventilating shaft. Water-closets for the use of more than one household are not, as a rule, allowed in the interior of a house, but must be placed in the courtyard and must have a door opening on the courtyard. If they are water-closets, they need not be furnished with ventilating shafts ; if not, they must have a shaft issuing at a higher level than the windows of the house.

Stables are only allowed by special permission of the Health Committee and in accordance with the directions of the Committee. They must always communicate with a sewer.

One of the duties of the Chief City Medical Officer of Health is to preside at inquests, assisted by the Fourth Divisional Health Officer, who is authorised to act as his substitute. If a body has been brought to the assistant physician, the latter may, however, undertake the inquest himself. Inquests are always held in the presence of the police and must be held if there is reason to believe that the cause of death ought to be investigated by the police. In cases of suicide or bodies being washed up by the sea or found elsewhere under peculiar circumstances, an inquest must be held by a medical man (for preference, a medical officer) and the police. Under ordinary conditions, bodies are examined by the medical man who has attended the deceased. In case of cremation, a death-certificate issued by the doctor who has treated the deceased is also required.

The Chief City Medical Officer of Health collects and prepares the material on which the medical and population statistics of the city are founded, and prepares a medical report which is presented to the National Health Committee and other

institutions. A doctor, who acts as the head of the Bureau of Medical Statistics and an assistant, who is also a medical man, assist him in the performance of these duties. They prepare a weekly bulletin based on the reports on the occurrence of infectious diseases furnished by the physicians of the city. These reports, for which the physician receives no salary, are sent in on special forms, the postage being paid by the Public Health Service. Failure to perform this duty constitutes infringement of the Epidemics Act and may involve a fine. Doctors who fail to comply with the rule are accordingly reported to the police, who take steps to compel them to do so.

Death certificates are registered and prepared for statistical purposes at the Bureau of Medical Statistics, which also prepares the statistical portions of the annual report. The head of the Bureau is also editor of the annual report, to which all the medical officers of health, the veterinary surgeons and the chief engineers have to furnish separate reports.

It remains to describe the municipal functions of the Chief City Medical Officer of Health. As has been mentioned above, the instructions defining this department of his work have not yet been issued. Briefly, the Director may be said to be at the disposal of the municipal authorities in all questions requiring expert knowledge of a medical or sanitary kind.

The above article may be summed up as follows :

The Chief City Medical Officer of Health is the head of that service in three capacities :

(1) As a member of the Health Committee and as the head of its staff ; (2) as Government official ; and (3) as a municipal officer. His duties may be classed under the following three heads :

I.

Matters relating to the treatment of children : crèches, orphanages, maternal homes, and the supervision of boarded-out children.

Drains, latrines, noxious trades, and housing.

Foodstuffs, and shops in which foodstuffs are sold.

Public-houses and doss-houses.

Drinking-water.

Epidemic diseases, disinfection, inquests.

Milk inspection.

Inspection of butchers' shops.

The supervision of hospitals for the treatment of venereal diseases.

The Vaccination Institute and the City Laboratory.

II.

The supervision of all institutions in which large numbers of persons are congregated.

The supervision of various matters relating to the duties of doctors, dentists, midwives and chemists.

The supervision of the sanitation of factories, the quarantine service, and housing.

The preparation of medical statistics.

III.

The obligation to be at the disposal of the municipal authorities in all sanitary questions.

In conclusion, a few words may be said about the advantages of distributing the work of the Divisional Health Officer according to subject, instead of putting each of them in charge of a district of the city. The former system produces more uniformity in the decisions of the Health Committee. Every Divisional Health Officer becomes an expert in his subject, and, as the Chief may distribute the work as he sees fit, or cause one case to be considered by several officers jointly, it becomes possible to examine sanitary questions from more points of view than was formerly the case, and the questions are submitted to the Committee in such a form as to enable the latter to arrive at a very rapid decision, the measures proposed by the medical officers of health being generally approved. Contrary to what was formerly the case, most of the decisions of the Committee are therefore now taken without previous debate. Furthermore, experience has proved that the present arrangement gives the Divisional Health Officer a much keener interest in his work and results in more being done. There is danger of some of them being saddled with more work than they can perform, but this danger may be obviated by the appointment of additional assistants. So far, the new arrangement has revealed no drawbacks.

THE MUNICIPAL HOSPITALS OF COPENHAGEN

BY HOSPITALSDIREKTOR K. M. NIELSEN.

The administration of the municipal hospitals in the metropolis is controlled by the Second Division of the Municipal Administration. A director — who is not a medical man — supervises the administration and finance of the hospitals.

Everything within the individual hospital, hospital department or laboratory which concerns treatment of patients, nursing and laboratory work is in charge of the respective senior physician or surgeon-in-chief.

The whole of the senior physicians and surgeons-in-chief, in conjunction with the Mayor and Alderman of the Second Division of the Municipal Administration, the Director of the Public Health Service and the Director of the Hospital, constitute the Hospital Board which meets at least once a year (in November) to discuss hospital questions in general and to examine the budget of same for the following year. The Mayor is chairman of the Board and convenes a meeting as often as he thinks fit.

At the annual meeting in November the Board elects four senior physicians and surgeons who, in the following year, together with the Director of the Hospital constitute a standing committee assembling at least once per month and, in addition as often as a member makes a request to that effect to the Director. The latter convenes and presides at the meetings; the proceedings are taken down in a minute-book which is signed by all members present.

The standing committee gives its opinion as to all cases placed before it by the municipality. In addition, it can itself take up cases concerning a plurality of hospitals or any cases of special importance to an individual hospital or hospital department, the chief physician or surgeon of which is convened by the committee to a discussion regarding the case under review. Moreover, all physicians or surgeons-in-chief can submit questions to the committee for discussion.

The opinion of the committee is taken regarding cases of general or fundamental importance to the hospital service.

Whilst the activities of the Hospital Board and Committee are essentially of an advisory character, the actual carrying-out of the administrative authority rests with the Director of the Hospitals, who, as mentioned above, is appointed by the Second Division of the Municipal Administration.

The office of the Director — the Directorate of Hospitals — is the central administrative office of the hospitals, whilst the daily administration of each hospital is carried out by an inspector and the staff under him.

In its capacity of central administration, the Directorate does not as a rule participate in the more detailed daily management of the institutions under its control. The administrative duties are carried out by the respective inspectors, their situation

Accordingly being rather independent and highly responsible. However, all joint concerns and more important decisions of interest to the individual hospital as well as of fundamental importance to all hospitals are treated and, in the majority of cases, finally settled by the Directorate of Hospitals.

In addition, the following specified duties rest with the Directorate :

After a preliminary discussion regarding the *budget* of the individual hospitals with the inspector in question, the budget is worked out at each hospital and thereafter handed in to the Directorate, where it is critically examined and worked up with the budgets of the other hospitals to be submitted to the municipal authorities.

Amendments to the budget are worked out in the Directorate, which submits them to the municipal authorities. Application for *grants* (and special grants) of importance are worked out for the municipal authorities by the Directorate, which, in case of minor grants, sanctions the defrayal of the expenses under review.

The *accounts* of each hospital are handed in to the Directorate, which forwards them to the municipal authorities.

When commodities are put up for *public tender*, they come under the province of the Directorate, to which tenders must be sent, and the former submits the tenders to the municipal authorities for approval.

The Directorate takes the final decision as regards the majority of *commodities*.

Appointments (excepting servants who are engaged by each hospital) are controlled by the Directorate ; the appointments to superior medical offices must, however, be submitted to the Hospital Committee.

The *distribution of patients* to the individual hospitals is carried out through the physicians directly appointed by the Director of the Hospitals, the so-called " Visiter ".

The payment for hospital treatment takes place at the office of the hospital in question according to the following rates :

Paying Patients.

Resident in common ward	1	kr.	20	oere	per	diem
» » single ward	12	»		»	»	
Non-resident in common ward	10	»		»	»	
» » single ward	18	»		»	»	
Foreigners in common ward	10	»		»	»	
» » single ward	24	»		»	»	

Children under 1 year, half of the above charges.

For *members of sick-benefit clubs* the hospitals receives 60 oere per diem — for a member's child under 15, however, only 30 oere per diem — up to 91 days. After that period the patient is treated free of charge for 91 days, and the payment and gratis periods alternate until the sick-benefit aid expires, *i.e.*, after 420 days. The patient who comes on to the Guardians' account should he or she be unable to pay the ordinary charges.

Several bequests have been given to the hospitals by means of which patients may be treated — free or at low rates — should they fulfil the special terms attached to these bequests.

The 60 oere and the 1 kr. 20 oere charges cover respectively only about 4 and about 10 per cent of the cost of maintenance. The municipal grants-in-aid to Hospital Service, including St. Hans Hospital but not those hospitals or hospital departments controlled by the Guardians, at present amount to 15 million kr. per year.

In addition to the hospitals proper, the management of the municipal convalescent and nursing homes is also controlled by the Directorate of Hospitals. Finally, the Directorate controls the Out-Patient Department in Loenporten, which is situated outside the boundaries of the hospitals, and the Municipal Nursing Homes.

The work of the Directorate of Hospitals consists, therefore, in dealing with general questions affecting the institutions controlled. Its work is assisted partly by the presence of the Directorate in the individual institutions and partly by means of reports made — at least weekly — by the heads of institutions in the Directorate. Finally, the Directorate convenes the heads of institutions to meetings when a mutual discussion of a question is held to be desirable, *e.g.* before the yearly budgets are prepared.

The hospitals and institutions the administration of which is centralised in the Director are the following :

1.	The Kommune Hospital	1,020	beds	
2.	The Oeresunds Hospital.....	513	»	
3.	The Blegdams Hospital	499	»	
4.	The Rudolph Berghs Hospital	176	»	
5.	The Boserup Sanatorium	152	»	
6.	The Sundby Hospital	126	»	
7.	The Balders Hospital	79	»	
8.	The Bispebjerg Hospital.....	700	»	
9.	The Children's Hospital at Fuglebakken.	72	»	
10.	The Convalescent Home " Skjoldborg ".	34	»	3,337
11.	The Nursing Home " Gyvelholm "	28	»	
12.	The Inebriate and Convalescent Home " Faarupgaard "	32	»	
13.	The Convalescent Home " Frederik Vilhelm Hegels Minde "	35	»	129
14.	The Municipal Nursing Homes			
15.	The Out-Patient Department in Loen- porten.....			
16.	The St. Hans Hospital at Roskilde (hospi- tal for insane)			1,673
Total number of beds.....				5,139

In the table below a general view of the attendance at hospitals during the period from 1890 to 1920 is given ; the table embraces only the hospitals under headings from 1 to 9 in the above list. In the case of the Kommune Hospital, however, the beds used by the municipality in private hospitals and clinics are included.

Year.	Total number of cases.	Total number of sick-days.	Daily average occupation.	Total population.	Annual number of hospital sick-days per head in the metropolis.	Number of sick-days per patient.
1890	14,314	375,514	1,028	315,000	1.19	26
1895	14,192	412,078	1,129	336,000	1.19	29
1900	17,082	520,173	1,425	358,000	1.45	30
1905	22,118	767,166	2,101	425,000	1.81	35
1910	27,195	940,980	2,578	453,000	2.08	35
1915	27,651	969,135	2,647	498,000	1.95	35
1920	35,004	1,148,688	3,145	562,000	2.04	33

A more detailed account of the individual institutions is given below.

1. KOMMUNE HOSPITAL.

The hospital, which was opened in the year 1863, is built on the corridor system. In its present form the hospital contains 1,020 beds distributed between the following departments :

First	Department, surgical	140	beds
Second	» medical	140	»
Third	» medical	135	»
Fourth	» skin and venereal diseases	130	» ¹
Fifth	» surgical	140	»
Sixth	» mental and nervous diseases	230	»
Department for ear, throat and nose diseases		28	»
» ophthalmic diseases		30	»
Private wards open to all departments		47	»
Total number of beds		1,020	»

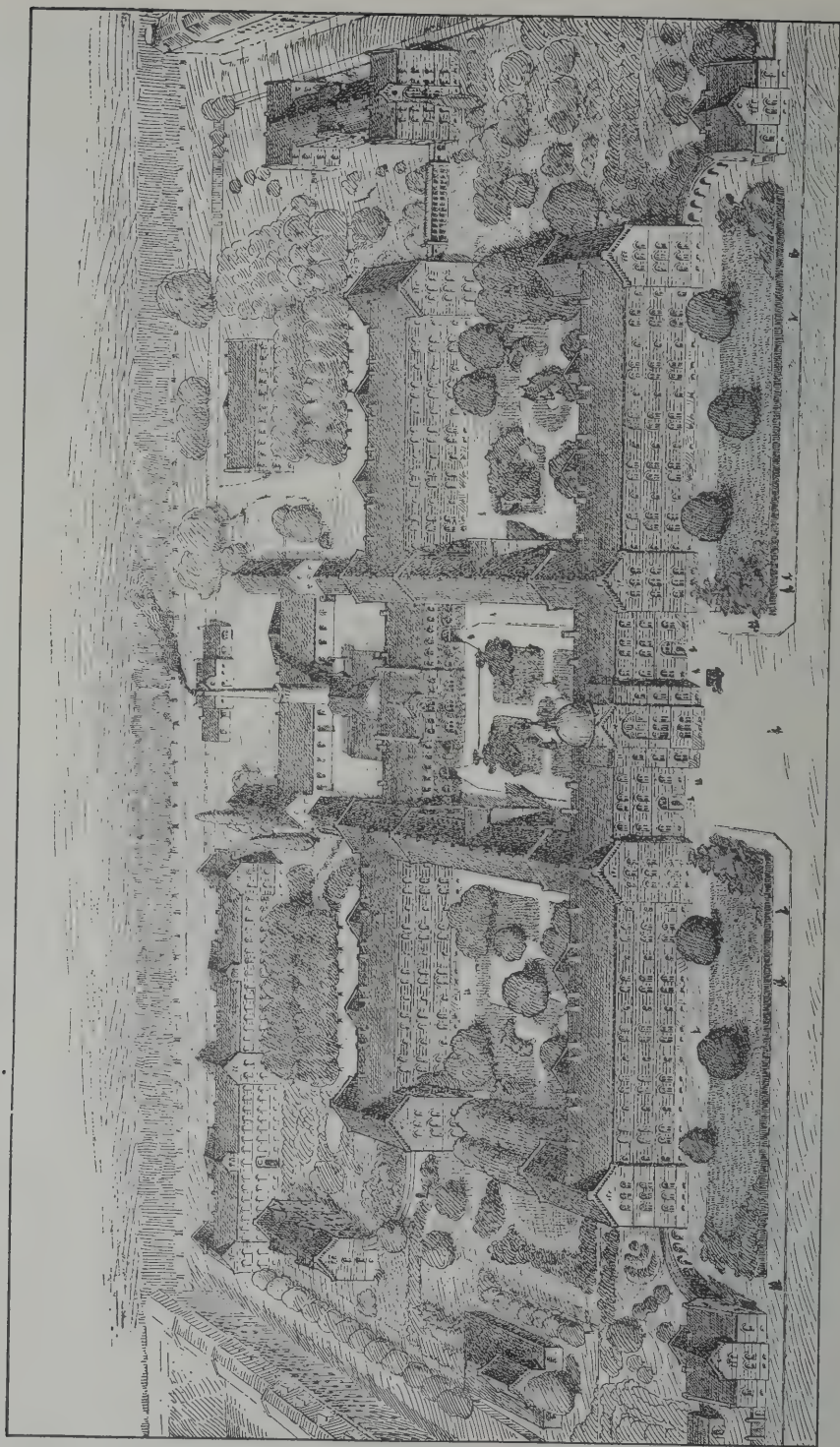
The average floor space per bed is 7.7 sq. metres, the air space 33.9 cub. metres. The hospital covers an area of 7 hectares.

In addition to the above-mentioned departments, the hospital includes a Röntgen department, a surgical out-patient department, bathing and massage establishment, and out-patient departments for skin and venereal diseases and for ear, throat and nose as well as ophthalmic diseases.

Situated on the hospital site there are houses for permanent officials, including a special home for nurses.

At the head of each of the eight departments is a senior physician or surgeon.

¹ As the in-patient treatment of venereal cases gradually decreased, the number of beds in this department was reduced, and during the last ten years the reduction amounts to not less than 130 beds.



BIRD'S EYE VIEW OF THE MUNICIPAL HOSPITAL AT COPENHAGEN.

Pursuant to the regulations of the Faculty of Medicine, the senior physicians and surgeons of the two medical and two surgical departments give bedside lectures to the medical students. Furthermore, the senior physician of the department for mental and nervous diseases is appointed by the university to give clinical instruction in, as well as theoretical lectures on psychiatria.

At the Kommune Hospital, as in all the other hospitals controlled by the metropolitan municipality, the nursing is in the hands of nurses who have been trained in the hospitals themselves.

In each department two head nurses are in charge — respectively of male and female wards — each having, excluding the probationers, a staff of trained nurses, generally seven, at their disposal.

A matron is in charge of the Nurses' Home. Part of her work consists in appointing probationers, supervising their preliminary training and assigning them to the various departments for further training.

The superintendence of the nursing service is assigned to a committee controlling the nursing services at all the municipal hospitals with the exception of the Bispebjerg Hospital and the Children's Hospital at Fuglebakken, which are controlled by a special committee.

The Nursing Committee of the Kommune Hospital consists of the Director of the Hospital, who presides at meetings, a senior physician or surgeon elected by and among the senior physicians and surgeons, the Matron of the Nurses' Home and two head nurses elected by and among the whole of the head nurses.

2. ØERESUNDS HOSPITAL.

This hospital, opened in 1878, was originally intended to act as a quarantine hospital, but it was afterwards altered and considerably enlarged.

The hospital is now divided into two departments, each in charge of a senior physician, *viz.* : a tuberculosis department, the senior physician of which also has charge of the minor epidemic department, and a medical department with a special sub-department of tuberculosis. The total number of beds is 513, arranged as follows :

Medical department, including sub-department for tuberculosis	300	beds
Tuberculosis department	191	»
Epidemic department	22	»
	<hr/>	
	513	»

The average floor space is 7.88 sq. metres, and the average air space 29.44 cub. metres.

The aggregate area of the hospital is about 6 hectares.

3. BLEGDAMS HOSPITAL.

This hospital, opened in 1879, is for infectious diseases.

The total number of beds is about 500, arranged in 14 brick-built houses and in a number of temporary huts or tents.

During epidemics the hospital has accommodated up to 600 patients.

The average floor space is 8.5 sq. metres, and the average air space 30 cub. metres.

The aggregate area is 7.7 hectares.

The hospital constitutes one service in charge of a senior physician, who has one deputy and two resident physicians at his disposal.

4. RUDOLPH BERGH'S HOSPITAL.

In the years between 1886, when this hospital was opened to the public, and 1906 only registered prostitutes suffering from syphilis and other venereal diseases were treated here.

Since 1906 — in which year the regulations for the supervision of prostitutes the police were abolished by the Act of October 11th — the hospital has received patients suffering from skin and venereal diseases, acting as a relieving station for the Fourth Department of the Kommune Hospital.

The hospital contains one department for men and one for women, both in charge of the same senior physician, and an out-patient department for skin and venereal diseases.

The total number of beds is 176, and the average floor and air space per bed amount to respectively 5.67 sq. metres and 20.26 cub. metres.

The aggregate area of the hospital is about 6,100 sq. metres.

5. BOSERUP SANATORIUM.

The sanatorium, which is situated in the Boserup woods at Roskilde, about 38 km from Copenhagen, was opened in 1901. It receives patients — preferentially metropolitan — suffering from tuberculosis of the lungs (at an early stage of the disease).

In 1906 the sanatorium was recognised by the State as "Folkesanatorium (people's sanatorium)". Accordingly, courses of treatment for patients in less affluent circumstances are now subventioned by the State.

The sanatorium consists of two buildings for patients, containing respectively a male and female department, both in charge of the same senior physician.

The total number of beds is 152, with an average floor and air space of respectively 6.99 sq. metres and 26.56 cub. metres per bed.

The aggregate area of the sanatorium, chiefly consisting of woodland, is about 30 hectares.

The Inspector of the neighbouring St. Hans Hospital (lunatic asylum) has control of the daily administration of the sanatorium.

6. SUNDBY HOSPITAL.

The hospital was opened in 1902 and receives surgical cases.

The hospital, constituting one service in charge of a senior surgeon, includes a Röntgen department and a surgical out-patient department.

The total number of beds is 126, with an average floor and air space of respectively 7.87 sq. metres and 27.61 cub. metres per bed.

The aggregate area of the hospital is 2.8 hectares.

7. BALDERS HOSPITAL.

This hospital was opened in 1903 and receives patients suffering from general medical diseases.

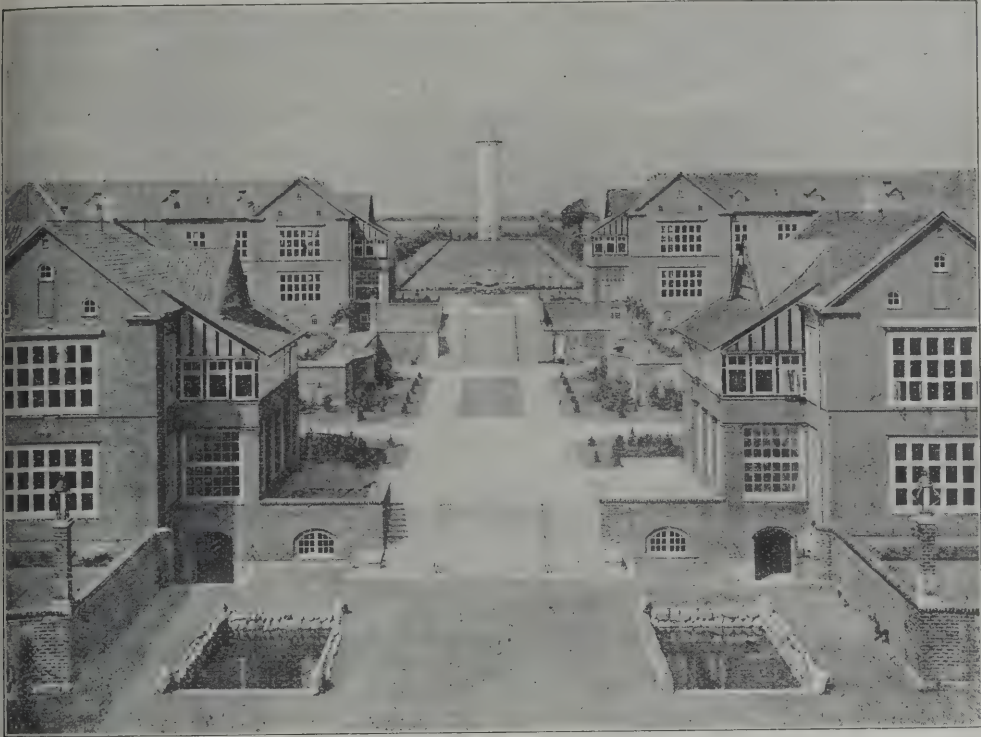
The hospital has a consultation room which is used for out-patient treatment of general medical and surgical cases.

The hospital constitutes one service in charge of a senior physician. The total number of beds is 79, the average floor and air space being respectively 8.08 sq. metres and 25.67 cub. metres per bed.

The aggregate area of the hospital is 3,100 sq. metres.

8. BISPEBJÆRG HOSPITAL.

The Bispebjerg Hospital was erected pursuant to a resolution passed by the Municipality on March 2nd, 1908, and the hospital was opened on September 19th, 1913.



THE HOSPITAL "BISPEBJÆRG".

At present, the hospital has 700 available beds distributed between three departments, viz.: one surgical and two medical, the former in charge of a senior surgeon, latter in charge of two senior physicians.



PLAN OF A WARD AT "BISPEBJÆRG" HOSPITAL.

The number of beds can be increased to 1,600 without it being necessary to enlarge either boiler-house, engine-room, kitchen, laundry or any of the other access buildings.

The aggregate area of the hospital is about 21 hectares. The average floor and air space per bed amount respectively to 9.15 sq. metres and 39.08 cub. metres.

The hospital is built on the pavilion system, but in such a manner that all pavilions are connected by means of a network of subterranean passages intended for conveyance of patients and goods.

The "central laundry", situated in the laundry of the hospital, does the washing for all the municipal hospitals (excluding Boserup Sanatorium and St. Hans Hospital at Roskilde); here, about 23,000 articles are washed daily.

The hospital includes a Röntgen department, bathing and massage establishment and an out-patient department for surgical cases.

9. CHILDREN'S HOSPITAL AT FUGLEBAKKEN.

The buildings of the hospital, which were erected by means of private funds — "Fonden til Oprettelse af et homöopatisk Hospital" (The Fund for the Establishment of a Homöopathic Hospital) — was rented by the municipality in 1916, and in 1917 was purchased by same.

The hospital can accommodate 72 children up to the age of 7.

The average floor and air space per bed are respectively 5.14 sq. metres and 19.5 cub. metres.

The aggregate area of the hospital is 1.2 hectares.

10. CONVALESCENT HOME "SKJOLDBORG".

The Home, which is situated at Frederiksværk, about 67 km. from Copenhagen was opened in 1917 and can accommodate 34 women discharged as convalescents from the municipal hospitals. The patients normally stay about four weeks.

The daily management of the Home is in the hands of a matron, a trained nurse; the medical supervision is in charge of a local practitioner who normally attends the convalescents once a week.

The administration of the Home is, in conformity with the other municipal convalescent and nursing homes, directly controlled by the Directorate of Hospitals.

11. NURSING HOME "GYVELHOLM".

The Home, situated at Holte, about 15 km. to the north of Copenhagen, was opened in 1918 and can accommodate 28 adults (men) suffering from tuberculosis of the lungs (slow consumption) without fever and of such relatively benign character that the patient is able to attend to himself, does not need constant nursing or medical attendance and at the same time has retained a certain amount of working capacity but where a lasting cure cannot be expected.

Normally the sojourn extends over several years.

The daily management of the Home is controlled by a manageress who is a trained nurse; the medical supervision is arranged as at "Skjoldborg".

12. INEBRIATE AND CONVALESCENT HOME "FAARUPGAARD".

The Home is situated at Jelling, in the vicinity of Veile in Jutland, and can accommodate 32 male inebriates (alcoholists) as well as male convalescents discharged from the metropolitan municipal hospitals.

The period of sojourn for inebriates is from 6 to 18 months ; for convalescents, four weeks.

As far as possible the inebriates are employed in carrying out agricultural work on the farm attached to the Home.

The daily management of the Home is controlled by a superintendent, whose wife, having passed a course in nursing, supervises the domestic concerns.

The medical attendance is arranged as at " Skjoldborg ".

13. CONVALESCENT HOME " FREDERIK VILHELM HEGELS MINDE ".

The Home, situated in Fredensborg, about 43 km. from Copenhagen, was taken over by the municipality of the metropolis in 1922. An enlargement has been effected, and the Home can now accommodate 35 female convalescents discharged from the metropolitan municipal hospitals.

The daily management and medical supervision are arranged as at " Skjoldborg "

14. MUNICIPAL NURSING IN HOMES.

In 1916, the municipal nursing in homes was introduced experimentally (with six nurses) ; it has since been extended and established. Thus the present appointments are as follows : one matron, 18 hospital-trained nurses, excluding probationers.

The nurses are distributed over the metropolis, which is divided into six districts.

The nursing in homes, which is gratuitous, is intended for panel-patients and the few who, without this aid, would be obliged to seek hospital treatment, or for those who, owing to lack of accommodation, cannot be admitted into any hospital, as also for such patients who can be discharged from the hospitals on the assumption that expert nursing is guaranteed in the home.

15. OUT-PATIENT DEPARTMENT IN LOENPORTEN.

The clinic, previously private with grants-in-aid from the municipality, was taken over by the municipality on October 1st, 1923, and is now under the control of the Directorate of Hospitals.

The clinic, which gives gratuitous consultation to indigents, comprises a surgical and medical out-patient department as well as an out-patient department for nervous diseases.

16. ST. HANS HOSPITAL.

St. Hans Hospital is a hospital for the insane intended for residents in the metropolis suffering from insanity. In 1816, the hospital, originally situated in the metropolis itself, was removed to a large country estate at Roskilde (*ca.* 33 km. from Copenhagen), the buildings of which formed the first framework of the hospital. Of these buildings only one still exists.

During the hundred years and more which have elapsed since the removal, the hospital has grown to be the largest hospital for the insane in Scandinavia.

The aggregate area is about 47 hectares.

The hospital buildings are grouped into a male hospital, comprising 676 beds, and a female hospital, comprising 997 beds ; total number of beds : 1,673. The medical supervision of each hospital is vested in a senior physician, assisted by a staff of house surgeons.

The hospitals are under a common administration ; likewise they have electric works, laundry, etc., in common.

The Director of the Hospitals, the two physicians-in-chief and the inspector constitute a board which meets to discuss the affairs of the hospitals.

* *

In connection with the above information concerning the institutions controlled by the Directorate of the Metropolitan Hospital Service, it must also be mentioned that the Hospital Service has established connections with some few private clinics and hospitals, so that a number of beds in these are filled through the afore-mentioned " Visitationer " specially appointed physician at the Kommune Hospital.

Among these private institutions I will mention only the largest, *viz.* : Dronning Louises Børnehospital (Queen Louise's Hospital for Children), which was opened in 1879 and, later, in 1910, enlarged, so that it now can accommodate 150 children suffering from medical and surgical diseases.

The municipality of the metropolis subsidises the hospital.

* *

Below, a short summary is given of the individual hospitals or hospital departments affiliated to the foundations of the Board of Guardians, the administration of which is controlled by the Third Division of the Municipal Administration.

" Almindelig Hospital " (General Hospital), which is an institution for old men and women of the metropolis in need of permanent relief — excluding people receiving *Aldersrente* (old-age pension) — as well as for younger incurables or cripples, includes a hospital department comprising about 300 beds.

The hospital department receives patients from the other departments of the foundation, as also patients admitted from the town or transferred from other municipal hospitals.

" Arbejderanstalten (Workhouse) Sundholm ", comprising partly a workhouse for able-bodied persons who can do a small amount of work temporarily unable to support themselves, partly a compulsory workhouse for persons on whom penalties are imposed for begging, vagrancy, etc., includes a sick-department of about 100 beds intended for the inmates of the workhouse.

" De Gamles By " (the old peoples' town), which is an old-age home for persons to whom an old-age pension has been granted, has a sick department comprising about 300 beds intended for old-age pensioners who have been granted residence in " De Gamles By " or who are transferred from other municipal hospitals.

Finally, the Third Division of the Municipal Administration controls a nursing home for indigent tuberculous patients (at late stages). The Home comprises *ca.* 80 beds.

THE RIGSHOSPITAL : ITS ADMINISTRATION AND MANAGEMENT

SUMMARY OF A PAPER BY H. F. QLLGAARD,

Director of the Hospital.

Building. — The hospital was built between 1905 and 1910 at a cost of 7,200,000 kroner ; extensions, furnishing, etc., have increased this total to 8,700,000 kroner. The hospital acts as a State hospital, admitting patients from all parts of the country, and also as a centre of instruction for medical students, nurses and midwives. It contains about 1,000 beds, and the cost per bed is reckoned at 7,740 kroner. The hospital is divided into the following departments, each of which possesses an operating theatre, laboratory, library, and scientific collection : 2 medical departments, 254 beds ; 2 surgical departments, 254 beds ; 1 ophthalmological department, 20 beds ; 1 otolaryngological department, 17 beds ; 1 dermatological department, 84 beds ; 1 children's department, 62 beds ; 2 lying-in departments, 283 beds, and, in addition, accommodation for out-patients. The Röntgen ray department is in a separate one-storey building. The kitchen, laundry, engine-house, disinfection rooms and mortuary are common to the different departments. There are also nurses' quarters, administrative offices, and the offices of the director and head physicians and surgeons.

Staff. — As the Rigshospital acts as an instructional hospital it is under the control of the Ministry of Education, and its budget is included in that of the Ministry. The director is not a medical man but a jurist, who in all medical questions consults the medical council of the hospital, or in minor matters the senior physician or surgeon concerned. There is a senior physician or surgeon at the head of each department and, in all, eight deputy physicians or surgeons, eleven first assistants, twenty-two house physicians or surgeons and ten clinical assistants.

The senior physicians and surgeons form the medical council ; four of them are appointed for an indefinite period and six for a period of six years ; they may be, and usually are, reappointed. The minor staff is appointed for shorter periods. The nursing staff consists of nine matrons, two head midwives, fifty-five departmental nurses, six assistant midwives, two hundred nurses and one hundred probationers. The administrative staff, at whose offices admissions and discharges are registered and the internal business of the hospital transacted, consists of one secretary, two head

clerks, four assistants, two clerks and two messengers. In addition there are small staffs for book-keeping, an inventory office, lying-in department, pharmacy, etc. Attached to the hospital are a school of midwifery and a school of nursing.

Finance. — The balance-sheet of the Rigshospital for 1922-23 was as follows :

<i>Receipts.</i>		Kr.	<i>Expenditure</i>		Kr.
<i>A. General receipts.</i>			(a)	Buildings, technical plants, rates and taxes, etc.	195,00
(a)	Receipts for treatment and nursing ..	705,459	(b)	Inventory and clothing	287,73
(b)	Horse taxes	4,409	(c)	Heating, electricity, water and gas	341,97
(c)	Contributions from legacies	18,980	(d)	Provision.....	853,55
(d)	Receipts for board and instruction from pupils at school of midwifery.....	15,237	(e)	Medicine, requisites for dressing, etc.	217,42
(e)	Interest	35,443	(f)	Laundry.....	19,42
(f)	Sundry receipts.....	5,926	(g)	Cleaning	32,68
<i>B. Various contributions.</i>			(h)	Upkeep of stables, horses, etc.	7,18
	From Exchequer ..	3,433,884	(i)	Office expenses, printing and stationery, etc.	27,18
	From Classenski Fideicommiss	10,400	(j)	Salaries and wages, etc.	2,159,41
	From City of Copenhagen	10,000	(k)	Grants to non-pensioners	33,53
			(l)	Nursing help for illegitimate children	10,48
			(m)	Interest on recognised sick legacy funds	20,23
			(n)	Sundries	33,91
<i>Total Receipts.....</i>		<i>4,239,739</i>	<i>Total Expenditure....</i>		<i>4,239,739</i>

The expenditure for a sick day during the last five years was :

1918-19	1919-20	1920-21	1921-22	1922-23
Kr.	Kr.	Kr.	Kr.	Kr.
12.49	16.29	20.89	16.44	13.06

The greatest fluctuations caused by the war have occurred in the price of coal (which has varied between 215 kroner and 30 kroner per ton), also in the prices of other commodities, and in the rise of salaries caused by high prices.

The daily hospital expenditure per head for food of patients and officials has varied between 93 øre in 1914, 2 kroner 53 øre in 1920, and 1 kroner 48 øre in 1922.

Patients' fees. — Any patient permanently resident in Denmark is admitted free of charge if : (1) entitled to public relief, (2) not in receipt of poor relief, (3) unable to pay without seriously prejudicing his economic position. Fifty-three per cent of the patients pay only 2 kroner per day ; 20 per cent 4 kroner ; six per cent 12 kroner, and about 20 per cent nothing at all. Among the maternity patients 70 per cent pay nothing, the rest from 2 to 12 kroner per day. Members of sick-benefit clubs recognised by the State and their children pay 2 kroner per day. Patients in single wards pay 12 kroner per day, foreigners 24 kroner per day ; in common wards, 4 kroner, foreigners 12 kroner. Hospital fees have increased in ten years from 200,000 kroner to 700,000 kroner per annum.

THE HOUSING CONDITIONS OF COPENHAGEN

BY POVL HEIBERG, M. D.,

Deputy City Medical Officer of Health for Copenhagen.

Four hundred years ago the houses of Copenhagen were still, in the main, constructed of wood and clay, with thatched roofs, although the town had already 10,000 inhabitants.

It was not until the year 1520 that new houses fronting the street had to be frame-built.

In the following years, frame-built houses in two stories and with the gable facing the street became the prevailing type of house.

In 1606, the area of the town was doubled by the purchase of 29 gardens, and the laying out of the ramparts was begun — those ramparts that for almost two hundred and fifty years were to hinder the town from spreading landwards.

At about the year 1700, the congestion within the ramparts was acute. Many of the streets were so narrow that they were impassable for vehicles. About this time the division of the houses into several dwellings was inaugurated.

During the following century, two great fires devastated the town, destroying respectively two-fifths and one-quarter of Copenhagen. When the town was reconstructed, the streets were somewhat widened, but simultaneously the houses were made higher, the result being three- to four-storied buildings.

It now became general for the houses to contain dwellings for eight to ten families.

It was not until 1852 that the line of demarcation, which hitherto had been two kilometres broad, was reduced. Permission was given to build beyond the three lakes, Sortedamssøen, Peblingesøen and Sct. Joergens Søe. This gave rise to a very objectionable suburban erection of five- to six-storied houses.

In 1853, a great cholera epidemic brought about the construction of somewhat lower and more detached workers' tenements, the so-called *Lægeforeningens Boliger* (the "Medical Association's Dwellings"), and, furthermore, contributed to the first Building Act being finally passed in Copenhagen in 1856. This was revised in 1873 and again in 1889. Therefore it will be seen that the existing Building Act is now quite behind the times. In 1867, the razing of the ramparts was voted.

During the following years, three parks were laid out, viz., Østre Anlæg, Botanical Garden (the Botanical Garden) and Ørsted's Park, as also the connecting boulevard. Simultaneously, the area between the inner town and its three suburbs was built upon.

At the same time the latter expanded, covering extensive areas beyond the lakes. A number of these areas formerly belonged to the Municipality. When disposing of

them in the beginning of the last century, the Municipality had established such sensible rules that, in laying out streets, determining heights of buildings, etc., it could make demands in excess of the insignificant requirements of the Building Act.

On the areas of the old military exercising grounds, a great public and sports park of about 65 hectares was laid out in 1893.

During the years 1901-2, the area of Copenhagen was tripled from 23 sq. km. to 69 sq. km. by incorporating three large villages, *viz.*, Broenshoej, Vanløse and Sundbyerne.

This caused such a change in all the sanitary conditions of the metropolis that in most cases it is impossible statistically to compare the conditions before and after the incorporation of these large rural districts.

Before the incorporation, the Municipality of Copenhagen had purchased extensive areas. These were later added to, so that the Municipality now owns considerable adjacent areas.

Of these areas, some building sites have been sold to building societies without any profit worth mentioning but with the right of repurchase after sixty to eighty years.

The building regulations for the great incorporated districts contain — in contrast to the Building Act applying to the older part of Copenhagen — provisions to the effect that the unbuilt area of a building site increases in proportion to the height of the building. For example, a five-storied house must only occupy one-third of the building site, whereas in the city proper a building, without consideration of height, may occupy three-fourths of the site.

An adequate regulation concerning surrounding areas is in most cases established in these districts by parcelling out an area and granting right of way. The regulation most commonly employed aims, for example, at limiting the buildings on a site to one single house (with housing for, at the most, two families), allowing only one-third of the site to be built upon, and prohibiting commercial and industrial enterprises.

As the size of the lots themselves varies from 300 square metres to 1,200 square metres, a density of population of from, at the most, 100 to 300 inhabitants per hectare is attainable, as compared with 600 to 1,200 inhabitants per hectare in the older parts of the town. On the main roads, however, buildings are permitted to be higher and more closely situated.

The housing difficulties engendered by the World-War finally brought about the so-called "small-lot building movement", which was legalised by a ministerial circular in 1920. Thus, on the land around Copenhagen, an arrangement was made for the erection of a number of "villages". Every "village" (society of owners of small lots) has to have an area of at least two hectares, and every lot (building site) must be at least 600 square metres. Not more than one-eighth of the area can be built upon, and the houses must be one-storied and at least 40 square metres, and must not be occupied by more than one family. On the other hand, these allotment societies have obtained permission to drain off the waste water on the lot itself, either directly through a drain consisting of a heap of stone in the ground or indirectly by accumulation in a cesspool, with subsequent distribution over the garden. More than 150 small-lot

societies now exist, the lots varying in size from not quite 2 hectares to 20 hectares and upwards. This style of building, with low, scattered houses, now covers 1,000 hectares and upwards.

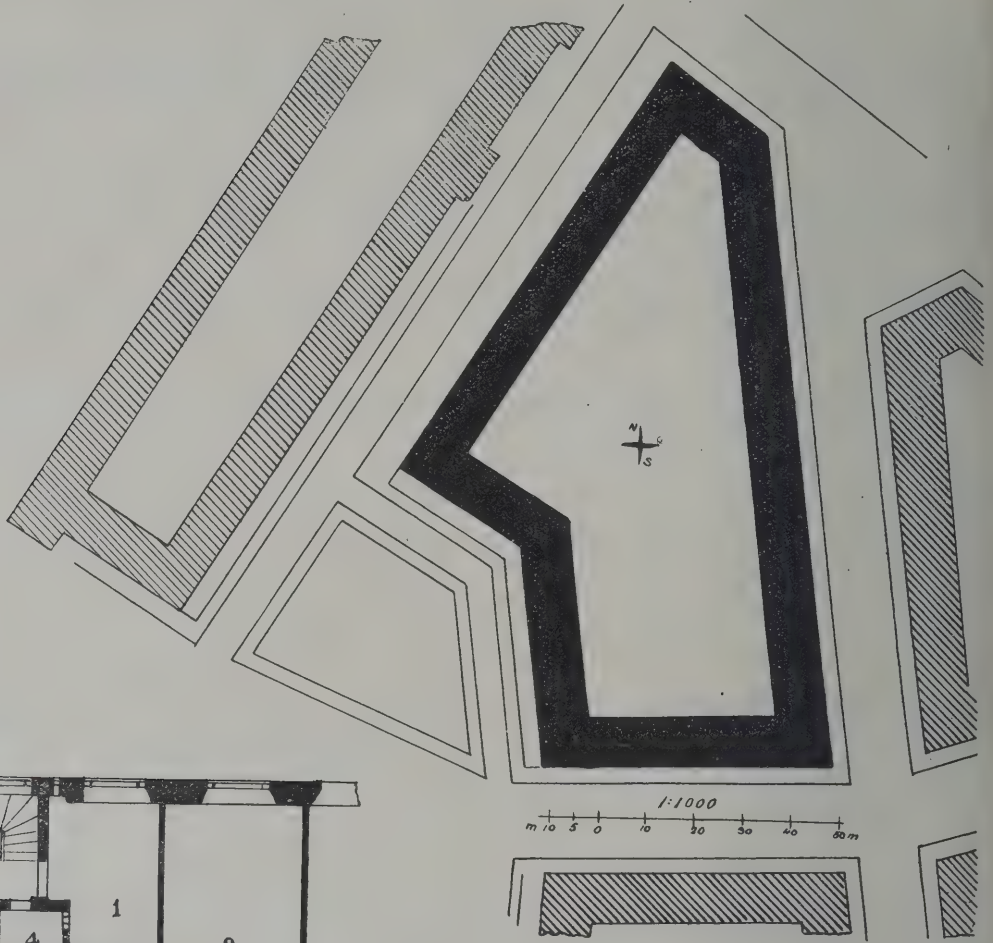


FIG. 5. — GROUND PLAN OF A NEW MUNICIPAL BUILDING FOR WORKING CLASSES (*Guldbergsgade*).

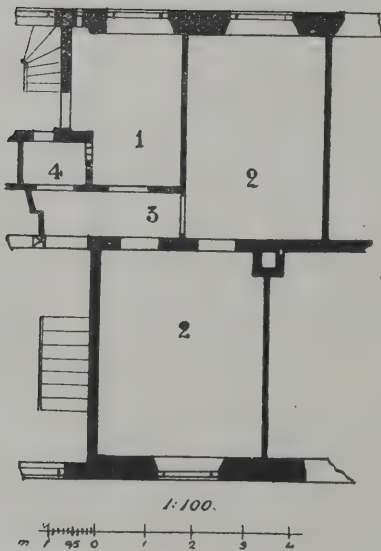


FIG. 6. — PLAN OF A DWELLING CONSISTING OF TWO ROOMS AND A KITCHEN (*Guldbergsgade*).

The town parks and gardens cover 120 hectares, and the so-called *Kolonihavefor enger* (allotment gardens) occupy 260 hectares.

THE TYPICAL COPENHAGEN WORKING-CLASS TENEMENT.

As 42 per cent of all Copenhagen homes still are to be found in tenements consisting of two rooms and a kitchen, it is obvious that the development of this type of dwelling characterises the housing conditions.

About 1870, when Copenhagen began to expand on a hitherto-unknown scale and in the course of a few years attracted thousands of workers, street after street, crowded with large tenement houses, came into existence in the three so-called suburbs Noerrebro, Vesterbro and Oesterbro.

Some of the most badly constructed tenement houses, for instance some houses in Fredensgade¹ and Nansensgade, date from this period.

The chief aim of the building speculators was to mass as many two-roomed tene-

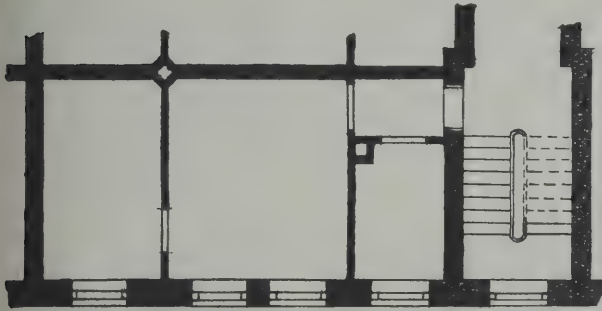
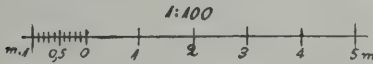


FIG. 4. — PLAN OF AN APARTMENT
CONSISTING OF TWO ROOMS AND A
KITCHEN (*Nansensgade*).



ments as possible into a house consisting of front-, middle- and back-buildings. Now the network of streets is laid out in such a manner that middle- and back-houses are done away with, but at that time it was almost the rule.

The large, sunny and airy district around Frederiksborggade, the rampart district, has to a certain degree been built according to this bad system with front-, middle-, and back-houses. The requirements of the fire service for access to two staircases for each dwelling in the large, deep areas brought about the erection of these badly planned tenement houses with long corridors and numerous tenements with entries from the common corridor. Various variations of this type of house exist (the T- and cross-shaped, etc.), but common to all of them is their noxious influence in hygienic as well as moral respects.

The aggregate floorage of each dwelling was in most cases less than 25 1/2 square metres, owing to an old provision dating from 1802 which exempted dwellings with

¹ Gade = street.

such a minimum of floorage from area tax. For many years this short-sighted taxation enactment debarred the building of more commodious dwellings.

However, during the following decades the type of house with the long common corridors and 8 to 15 dwellings on each floor was superseded by the now prevailing type of house with but from two to three dwellings on each floor. Still, the six-storied house was retained, and in some cases even, after a dispensation had been obtained, seven-storied houses were erected.



FIG. 8. — EXPERIMENTAL BUILDINGS
AT GENTOFTE (GROUND PLAN).

Simultaneously, the aggregate floorage of a tenement was raised to 32 square metres by an alteration in the taxation enactment of 1802.

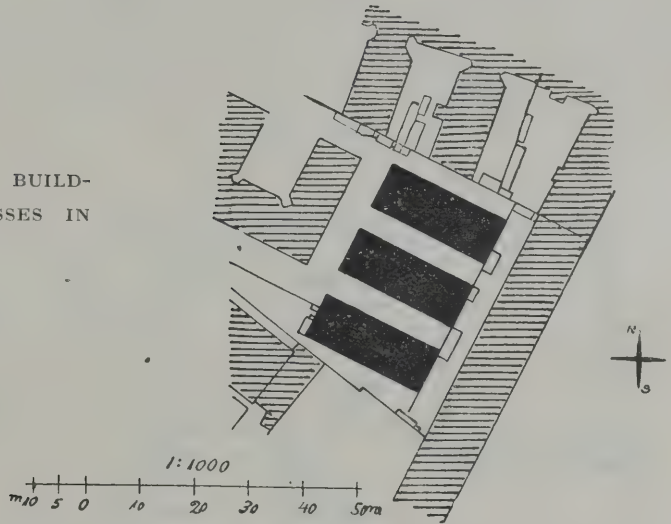
Nevertheless, it was not until about the year 1900 that the construction of more commodious and in several respects better two-roomed dwellings was begun ; this was especially the case on the outskirts of the so-called suburbs. These dwellings frequently have an aggregate floorage of about 40 sq. metres. The rooms are planned in such a manner that cross ventilation is secured. The windows are large, and there are only two flats on each landing, but the flats are situated in large tenement houses with from eight to ten flats on each staircase.

It has not been possible to establish the two-roomed as opposed to the three-roomed dwellings in self-contained, self-owned houses built by building societies.

THE COPENHAGEN BUILDING SOCIETIES.

In Copenhagen, there are a number of older building societies which have worked on a sound, partly philanthropical, basis and have directly, as well as indirectly, contributed towards the improvement of the housing conditions of the metropolis.

FIG. 3. — BACKHOUSES OF BUILDING FOR WORKING CLASSES IN NANSSENSGADE.



After the great epidemic of cholera in 1853, the *Lægeforeningens Boliger* ("Medical Association's Dwellings") were built on the surplus of a subscription in aid of the victims of the epidemic. At present they are capable of housing about 2,000 people.

In 1865, the "Workmen's Building Society" was founded. In the course of years it has progressed steadily and now controls 1,500 houses situated at eight different places in the city.

The district between the Sortedams Lake and Queen Louise's Hospital, as well as the new district at the Lyngby Road, were both built by the "Workmen's Building Society". At the last place, however, the society has yielded to the temptation of building three-storied houses instead of the two-storied ones previously the standard.

Towards the beginning of the new century, an agitation was set on foot to provide "A House for every Citizen". It coincided with an acute scarcity of housing in Copenhagen. Golden promises and alluring prospectuses were distributed by the thousand and readily accepted. On the payment of a provisional weekly instalment of some few shillings, the prospect was held out to people of becoming in the course of a few years owners of houses with small gardens and easy tramway connections.

One small building society was founded after the other (*e.g.*, the "Friends' Home", the "Future's Hope", etc., all of them with beautiful, confidence-inspiring names). All these societies were based on the principle of solidarity, a principle which was later on seen to be a two-edged sword.

In actual practice, nearly all decisions rested with the chairman of the society, and some of the chairmen were unable to resist the great pecuniary temptations which their position involved.

Besides, in this country the same lawyer can represent both seller and buyer, and the building societies, in their simplicity, often consulted a lawyer who was already looking after the affairs of the landowner. Naturally he often became the leading spirit of the society, being, as was often the case, much more conversant with the management of large concerns than the members of the society.

In spite of everything, some of the building societies of that time were a success, but the majority of the members suffered disappointments; the old members left, and new, more prosperous, members took over the houses under more favourable conditions.

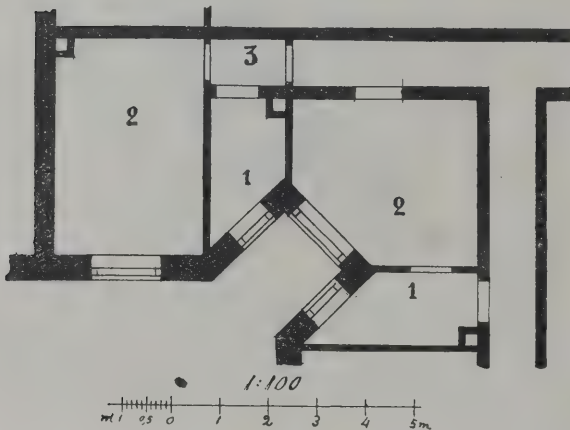


FIG. 2. — PLAN OF TWO DWELLINGS,
EACH CONSISTING OF ONE ROOM
AND A KITCHEN.

From a sanitary point of view, this intensive building movement was very beneficial in that it provided a number of good, detached dwellings on the outskirts of Copenhagen, *e.g.*, south of Sundbyerne, at Broenshoej and to the west of Valby. Many of the building-society houses contain one or two dwellings with three rooms and a kitchen; some, however, have nominally two-roomed dwellings only. Nevertheless, the housing conditions are much better than in the antiquated, high tenement houses in Noerrebro and Vesterbro.

By means of subsidies at a low rate of interest, the State contributed to this building movement.

In 1911 and 1912, after an interval of some years, an impetus was again given to the building-society movement, and the three large building societies, in the main of a more public-spirited character, "Groendalsvænge", "Præstevangen" and "The Workmen's Co-operative Dwelling Society", were founded. The distinctive feature

of these building societies is the endeavour to deprive the members of the possibility of speculating in a future rise in value and of discounting this by sale of their rights of membership or — after the dissolution of the building society — by the actual sale of the houses. The members have only a right of usage of their dwellings, and this right cannot be transferred except to the building society itself. The "Groendalsvange" must be mentioned more fully. This society bought from the municipality

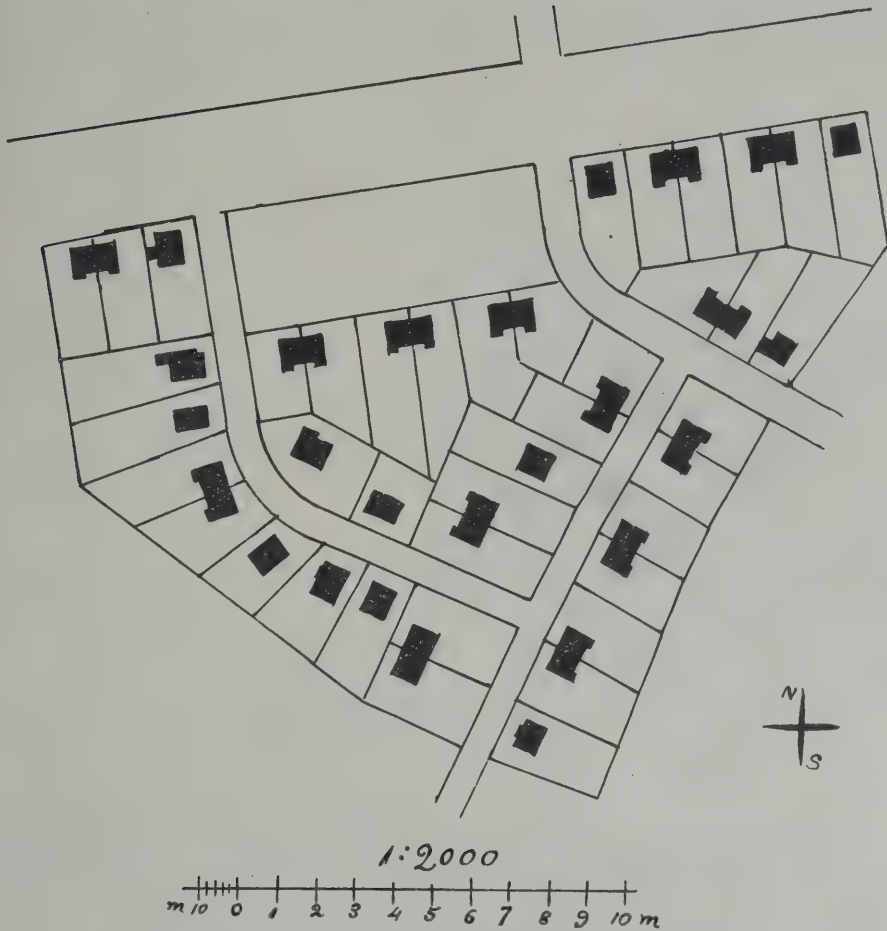


FIG. 7. — PLAN OF ONE-STOREY HOUSES BUILT BY THE BUILDING SOCIETY "GROENDALS VAENGE".

Copenhagen 22 hectares and thereupon planned the erection of 400 houses. The size of the lots varies from 300 sq. metres to 600 sq. metres. There are fifteen different types of house, of a somewhat uniform character. Every member has the right to choose which type of house he wants.

Up to the present, 167 houses, partly detached, partly semi-detached, have been erected, the area built upon covering from 60 to 80 sq. metres. All these 167 houses are of the single-family type of house, containing two to three rooms on the ground floor and one bedroom on the first floor. Besides these, 72 houses have been erected for two families. The terms stipulated on purchase of the 22 hectares were that the purchase price plus the cost of the construction of roads should be held as a third mortgage. The position of this mortgage was determined as follows: when the first and second mortgages are taken out, and the 500 kroner which the member has to subscribe are paid, it takes its place between the total cost of building (ground, buildings, loss by fluctuation of exchange; and expenses) and the 500 kroner. The members are bound to guarantee jointly and separately the debts incurred by the society. Finally, the Municipality of the metropolis stipulated a right of repurchase of the land.

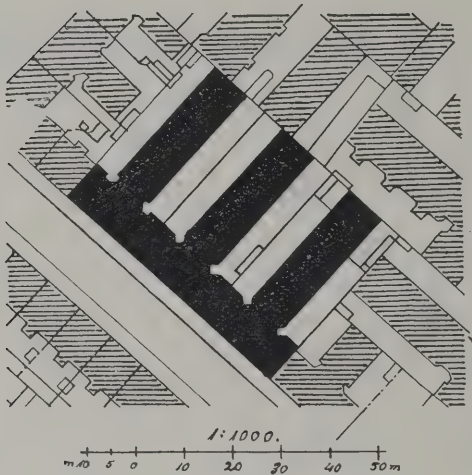


FIG. 1. — GROUND PLAN
OF THREE BUILDINGS AT
FREDENSGADE.

itself in the year 2000, on payment of the original purchase price and an indemnification equal to the value of the building at that time. It is the society, and not the individual member, which owns the land as well as the buildings. The individual member cannot sell his right of membership. Should a member, for some reason or other, be compelled to leave the society, the board of the society negotiates with and admits the new member. The out-going member is compensated for the instalments paid as well as for improvements effected on land or buildings, according to the appraisal of the board.

"Præstevangen", covering an area of 25 hectares, is organised on somewhat similar lines.

"The Workers' Co-operative Dwelling Society" was founded as a "co-operative limited liability society" by representatives of the Copenhagen building trades and "The Co-operative Societies of Copenhagen". Everybody who is of age can be admitted

as a member of the society, the aim of which is to acquire dwellings, the rent being merely the sum necessary for the payment of interest, taxes and upkeep plus instalments on building expenses, etc. This building society has erected a number of tenement houses of many stories, with an aggregate number of about 2,000 dwellings. To these belong Svanemoellen (Oesterbro), with 244 dwellings, of which 100 are two-roomed.

On almost the same lines as these three building societies are "The Co-operative Building Society of Copenhagen" and the "Co-operative Dwelling Society 'Valby Vænge'". The former controls 900 flats in tenement houses; the latter 60 one-storied, semi-detached, one-family houses.

"The Workers' Co-operative Building Society, Ltd." occupies quite a peculiar position among the building societies in that it is not a society of people in search of dwellings but a union of co-operative producers' organisations. It was founded in 1912, with an aggregate share capital of 100,000 kroner (£5,000), a number of co-operative workers' societies, viz., the joint-stock companies of journeymen masons, carpenters, etc., being the shareholders.

This joint-stock company has built a large block of houses at Enghavevej (called Frederiksholm), with about 500 commodious two- to three-roomed flats in three-storied houses and three tenement-blocks at Jagtvejen consisting of more than 600 flats.

During the World-War, there was a considerable scarcity of housing in Copenhagen as elsewhere. Accordingly, both the State and the municipality supported the building enterprises in various ways (exemption from taxation, loans at a low rate of interest and actual grants-in-aid).

This tempted a number of building contractors, landowners, artisans and other smart persons to found building societies, not so much with the intention of securing dwellings for members as to obtain for themselves a share in the public grants. In some few of these war-time building societies it was even stipulated that the members were forbidden to hold general meetings before the building was completed, the mortgage taken out and the contractor's bills paid — and the latter were not inconsiderable under such circumstances. The contractors' and artisans' estimates during these years were so arranged that provisos against a rise in the prices of material and wages were introduced. Thus the contractors had absolutely no interest in avoiding unnecessary rises.

If the building movement should in the future take a considerable hand in the building of new houses, it is of vital importance that "contractors' building societies" could be avoided and that the chief stress should be laid on building societies of a charitable character, conducted on purely co-operative lines.

The Government supervision will, as hitherto, generally prove insufficient to check irregularities.

In the *Copenhagen Statistical Year-book* (*Annuaire statistique de Copenhague*), a score of tables dealing with the building and housing conditions of the metropolis are to be found. All these tables are provided with both French and Danish texts, and can thus easily be used by foreigners.

A Housing Commission, consisting of five members, a mayor, the Chief City Medical Officer of Health (Stadslæge), a municipal architect, the Vice-Director of the

City Police, the Chief of the Fire Brigade and a member of the Town Council elected by the Council, supervise the working of the Building Act now in force. The board has at its disposal nine building inspectors, each in charge of a district.

A Health Committee (Sundhedskommission), somewhat similarly constituted, attends to complaints regarding overcrowding, damp dwellings, etc.

Finally, there is the recently established Housing Inspection Service, controlled by the Health Committee (Sundhedskommission) with two engineers at its disposal.

MEDICAL INSPECTION IN SCHOOLS IN COPENHAGEN

BY POUL HERTZ, M. D.,

Medical Officer of Schools.

The number of schools in Copenhagen is 62, *viz.* public elementary schools and secondary schools (*i.e.* *Realskoler*, at which the final examination is passed at the age of 16, and *Gymnasier* ; matriculation at the age of 18) containing a total number of about 60,000 pupils. School attendance begins at the age of 6 or 7. In 1897, the



CLEANSING OF SCHOOL KITCHEN.

Medical inspection of school-children was introduced, and each medical inspector has, as a rule, two schools to which he is attached, being thus in charge of approximately 100 children.

The various tasks of the medical inspectors of schools are as follows :

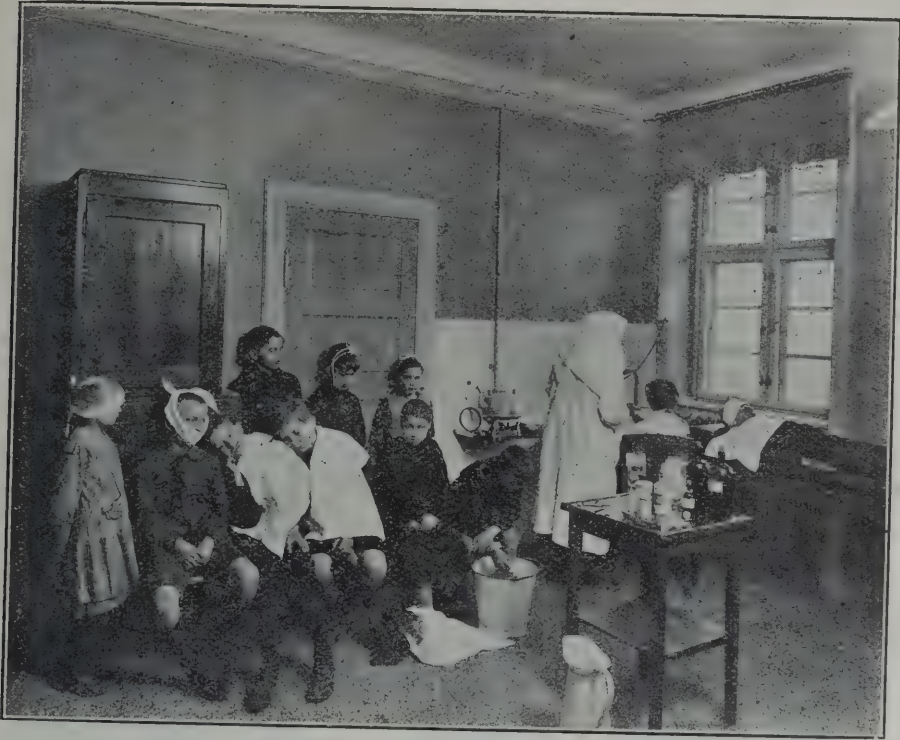
1. *To inspect and supervise the health of the pupils.* (a) All children are examined shortly after entering school. The examination, at which the children undress to the hips, comprises : state of nutrition, weight and height, inspection of throat, nose, ear



REMOVAL OF HEAD-LICE.

and eyes, auscultation of heart, as also ocular and aural tests. Should a more thorough examination be necessary, this is carried out. The mothers of the children are invited to attend the examination in order that the medical inspector may obtain anamnestic information from them. The results of the examination are accorded on a *health-card*. (b) At the beginning of puberty this examination is repeated, as regards the

girls, in the 11th-12th year, in respect to the boys, in their 12th-13th year. (c) Children suffering from fundamental chronic constitutional or localised diseases have to appear before the medical inspector for regular observation, the frequency of which depends upon the character of the disease. (d) Once annually the medical inspector visits each classroom, inspects the pupils one by one, obtains information as to their general health from the teacher and notifies, if necessary, any of the pupils to appear before him



MEDICAL TREATMENT OF CHILDREN AT SCHOOL.

for a more detailed examination. (e) Twice a week the medical inspector attends at the school, and at these consultations the teachers have to send any pupils concerning whose health they consider it necessary to consult the doctor. Furthermore, at these consultations, those pupils who have to appear "for observation" are examined, measured and weighed, as also the pupils whom the medical inspector during his visit to the classes has notified to appear before him.

2. To inform the teachers as to the health defects or ailments observed at the examination, especially with regard to those impairing the capacity of the pupils to attend to

the teaching, and to give the teachers the necessary instructions as to the special considerations to be paid to the pupils in question, *e.g.* as regards the seating of the weak-sighted or hard-of-hearing, gymnastic training, etc.

3. *To see that the ailing and delicate children are placed under treatment or that the right measures are provided for them.* Should the medical inspector observe any fundamental disease or ailment in a child, he notifies the parents by letter advising them to place the child under treatment. Simultaneously, he sends the teacher of the child a notice to keep him informed as to whether his advice is followed. *If not, either*

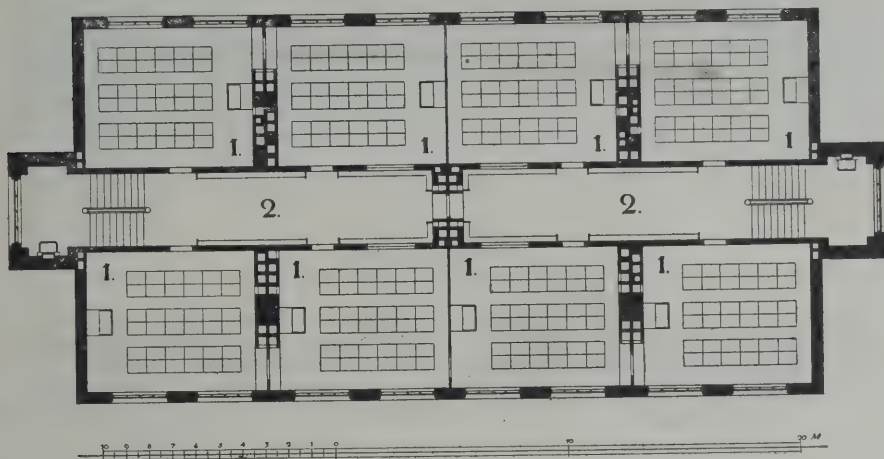


TREATMENT OF AURAL DISEASES AT THE SCHOOL FOR PARTIALLY DEAF CHILDREN.

written notice is sent to the mother to appear before him or the school nurse may be sent to the home in question. As a rule it is then possible to get the parents to take rational measures for the good of the child. In certain cases the medical inspector himself can advise the parents. Should a child suffer from a disease that is neglected

and for which the child can be treated as out-patient, it may be sent to the *Nursing Station*, a kind of out-patient department for schools ; the total number of these is six, there being one in each of the various districts of the city.

4. *To provide measures against the spreading of infectious diseases within the school.* It is the duty of the teachers to notify the medical inspectors every time a child is placed on the sick-list suffering from an infectious disease. Should school or class epidemics occur, the medical inspector has to advise the head-master regarding the measures to be taken and to make the necessary examinations himself.



THE SCHOOL IN OESTRIGSGADE.
(1) SCHOOL ROOMS. (2) CORRIDORS.

5. *To supervise the sanitary arrangements at the school and act as the adviser of the school in questions of hygiene.* At his visit to the school the medical inspector has to observe the use of ventilators and heating apparatus, the correct use of school furniture, the seating of the pupils, the position while working, lighting, cleansing, etc.

At the head of the School Medical Service is a chief medical inspector who is also adviser to the Board of Education on hygienic and sanitary questions.

To the schools, "*school nurses*" are attached who daily, in accordance with instructions from the medical inspector, have to treat, each at her "*station*", the children sent to them. Should the health of a child make it desirable, the nurses may be sent to the home of the child in order to gather information as to its condition. Finally,

they carry out the cleansing of girls who have vermin in the hair in cases where the mothers, in spite of reminders, have neglected to do so.



THE MUNICIPAL SCHOOL AT NYBODER.



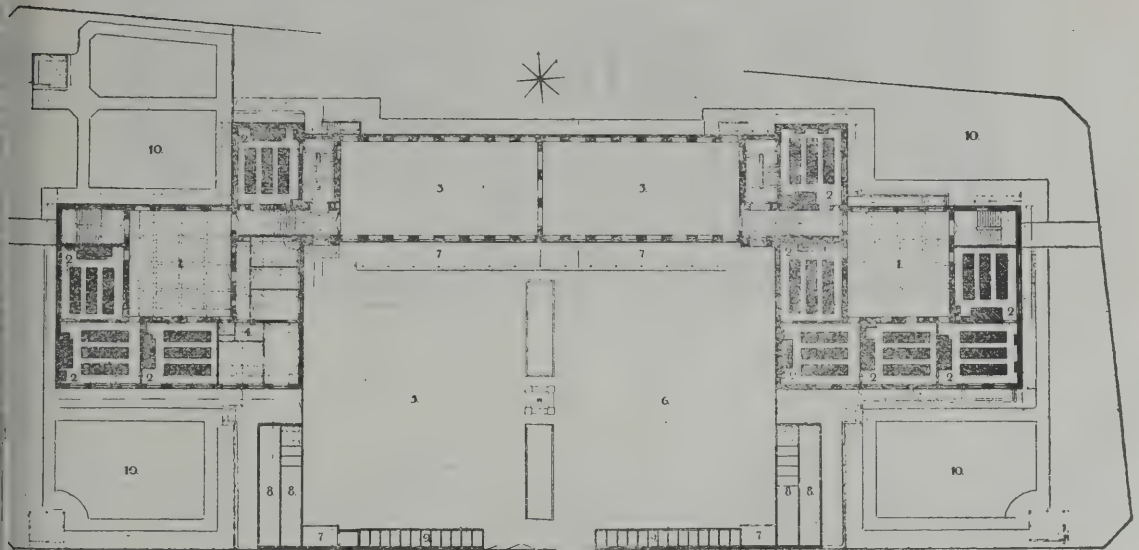
PLAN OF THE SCHOOL AT NYBODER.

A special school for children suffering from infectious tuberculosis has been established. They remain at school from 9 a.m. to 4 p.m., receive instruction according to their strength, rest in the open air for two hours daily and get three good meals.

For this school there is a specialist in diseases of the chest who examines the children once weekly.



THE SCHOOL AT BROENSHOEJ.



PLAN OF THE SCHOOL AT BROENSHOEJ.

For the *hard-of-hearing*, there is a school in which the instruction is adapted to the needs of these children. Their diseases are controlled by an aural surgeon, and they are treated at the school as prescribed by him.

For very weak-sighted pupils there is also a school, at which the instruction is arranged according to their seeing-powers ; as far as possible this is carried out orally and reading and writing is assisted by various optical aids. To this school an oculist is appointed. All necessitous children with anomalies of refraction are supplied with spectacles free of charge.

At Frederiksberg, Copenhagen's neighbouring municipality, medical inspection at schools is carried out on the same lines.



LUNCH ROOM FOR POOR SCHOOL-CHILDREN.

All teachers, both male and female, at the secondary schools in Denmark have to undergo a course and pass an examination in school hygienics. A special lecturer (medical man) is appointed to teach this subject.

As to the various types of school-buildings in Copenhagen, the school in Østrigs-gade is an instance of the type that prevailed at the beginning of this century. As in all municipal schools, the building is divided into two parts of equal dimensions, one for girls, the other for boys. In each storey, eight classrooms are situated, each intended

or 36 pupils. A wide corridor runs through the middle of the building ; it is lighted partly by the large windows in the cages of the staircase, partly by large glass insertions in the walls dividing the class-rooms and the corridor. The corridor is used as a cloak-room for the pupils.

The school at Nyboder represents the type of schools built since 1910 with the class-rooms situated at the one side only of the directly lighted corridors.



SWIMMING LESSON AT THE BATHING ESTABLISHMENT "HELGOLAND".

Finally, the school at Brønshøj represents a quite new type that, to my knowledge, has not been introduced anywhere else. The class-rooms are assembled in two pavilions in which the classrooms are grouped round a central hall with windows facing north. One of the pavilions is intended for boys, the other for girls. The two pavilions are connected by a centre building containing gymnasias, all the rooms set apart for the teaching of more special subjects (physics, natural history, chemistry, sewing, singing, cookery, etc.) and the administration rooms. All these rooms are situated on one side of the directly lighted corridors connecting the two pavilions. In case of great epidemics this school can be used as a hospital.

In the municipal schools of the metropolis, there is an air-space of at least 4 cubic metres per pupil, and even this minimum is only to be found in the classrooms intended for the youngest pupils, children of from 6 to 8. In the classrooms intended for the older pupils, the air-space increases to 5 cubic metres or more. In addition, all schools are provided with excellent ventilating apparatus.

The window space in the classrooms is one-sixth of the floor-space. Every fortnight all the pupils have a shower-bath, and there are good bathrooms in all the schools.



A GYMNASTIC LESSON FOR GIRLS.

During the six winter months all poor children are provided with dinner consisting of two courses.

Two years ago dental treatment was introduced. Up to the present, there is only one particularly well-organised dental clinic, but it is intended to establish others later on.

Both girls and boys receive gymnastic instruction ; the boys also receive instruction in games (football).

During the summer, both girls and boys are taught swimming in the bathing establishments on the Sound and in the fair-way of the harbour. All schools are provided with excellent gymnasia, one for girls and one for boys.

Every other week a warm soap-bath (shower-bath) with subsequent cold douche is provided for the pupils.

All the boys are taught wood-work according to Axel Mikkelsen's system, and in all schools manual workshops are to be found.



SCHOOL KITCHEN (DEMONSTRATION).

Elementary school education includes compulsory teaching in cookery and nutrition, and the plan of tuition for the various forms is per week as follows :

- The 6th form : two consecutive lessons ;
- The 7th and 4th, intermediate forms : one plus three lessons ;
- The 8th form : four consecutive lessons.



SCHOOL KITCHEN.



SCHOOL BATH IN NYBODER.

The average number of pupils attending the cookery lessons is 24, and the total number of school-kitchens is 31.

The object of the teaching is to instruct the children in practical housework, especially everything connected with cookery, to develop their sense of order, to teach them the most practical way of using all utensils, to give them an idea of economy and hygiene, and, at the same time, to make the teaching in practical matters as far as possible bear upon the knowledge acquired by the children in the other branches of education in the school, particularly with respect to physics, arithmetics and hygiene.



WEEKLY EXAMINATION BY THE SCHOOL DOCTOR.

THE SUMMER HOLIDAYS OF COPENHAGEN BOARD-SCHOOL CHILDREN

BY H. BENDIX POULSEN,

Country Medical Officer of Health.

During the last thirty-five years, a large number of Copenhagen board-school children have been sent into the country for their summer holidays, which last about six weeks.

Originally, the children were always placed singly with country people, who gave them free board and lodging, the State Railway granting them free passes from the capital to the place in question.

During the last twenty years, so-called holiday camps have also been established. In these camps the children live under the supervision of two or more teachers. Both systems are generally considered extremely valuable. It is not only the physical health of the children which is benefited by the stay in the country: the children almost invariably return to the metropolis sunburnt and in good health, and, moreover, they take with them new and valuable impressions. In a great number of cases, these visits to the country have been known to determine the future of the child. It is not unusual to find a Copenhagen schoolboy apprenticed to a village grocer or a village artisan with whom he has spent his summer holidays for five or six years running. Some boys prefer to take service on a farm to becoming messenger-boys in a metropolitan store. There are innumerable examples of former "holiday children", as they are called, marrying a son or daughter of the family with whom they have spent their holidays and in such cases they often settle in the country themselves. This is to some extent counterbalanced by the flow of the younger country population going into the towns, and this interchange of population between town and country is generally considered very beneficial from a social point of view.

The system of placing the children singly, according to which they live like members of the country families with whom they stay, is universally looked upon as the best, but it has proved impossible to find a sufficient number of hosts for the children. The country people are somewhat reluctant to undertake the responsibility of looking after the town children. During the last twenty years Danish farmers have begun to use machinery and electricity to an increasing degree, and unfortunately there have been some accidents. Nevertheless, the majority of Copenhagen board-school children sent into the country during the summer holidays are still placed with private families.

In 1888, there were 25,000 board-school children in Copenhagen. Of these, 8,000 were given free passes by the State Railways, all of them being placed with private families.

In 1916, the number had increased to 56,000, of whom 22,000 were placed with private families in the country, while about 3,000 spent their holidays in camps.

The children placed singly always travel alone, often with labels stating the name and address of their host sewn on their jackets. The State Railway, which, as mentioned above, gives them free passes, often despatches special trains with "holiday children" to various parts of the country. These children spend the whole of their summer holidays (six weeks) in the country. The hosts receive no payment for the children in any form whatever.

The holiday camps were started by teachers as a supplement to the system of placing children with private families. Each camp consists of from 20 to 90 children, chosen by their teachers not so much according to conduct as to their mental and physical need of a holiday in the country. The Teachers' Union has succeeded in acquiring about twenty suitable houses scattered over the country, almost all of them near enough to the coast to allow of sea-bathing. The house is often a village meeting-room, boarding-school, or an empty manor-house. In order to enable the greatest possible number of children to get their chance, each party rarely spends more than two weeks in camp.

Beds, kitchen utensils, etc., are generally lent by the army depots. A local cook engaged to superintend the house-keeping if this task is not taken over by a school-kitchen teacher.

The children get up at seven o'clock in the morning, make their beds, clean up the dormitory and wash. Then the whole camp assembles round the flagstaff, singing, while the "Danebrog" is run up. After breakfast, the children play about and amuse themselves with various sports all through the morning.

Before dinner, at twelve o'clock, the children generally bathe in the sea. They then play or rest till two, when they have "afternoon tea", consisting of new milk and white bread.

Afterwards, they take a long walk under the supervision of one of the teachers. Supper is at half-past six.

Frequently the children are invited by the neighbours to go for a cruise, or for a picnic in the carts of a neighbouring farm. In the evening they again assemble round the flag and sing, while the "Danebrog" is slowly lowered.

Walking tours, lasting about a fortnight, under the direction of a teacher, have also been arranged.

For the year 1922, the following figures, relating to the cost of these holiday camps, are available:

One group of 1,757 children, distributed in 40 camp parties and three walking parties, were superintended by 90 teachers and 55 domestic assistants (women).

There were altogether 26,025 "day units" (a day unit being board and lodging for one child for one day), at a total cost of 66,831.85 kroner. This sum was contributed by voluntary gifts.

The Corporation of Copenhagen contributed 25,000 kroner, the remainder being made up by various collections in the newspapers, among the trades unions, etc. The Teachers' Union has also taken charge of the establishment of camps for infirm children. During the period May 1st, 1922, to October 1st, 1922, 213 infirm board-school boys (not tuberculous) were placed in five camps, the aggregate number of day units being 10,000 and the total expenditure 39,120 kroner.

These children are chosen from among all the infirm children of the same age from the various schools and are taught while staying in the camps.

DENTAL TREATMENT OF SCHOOL-CHILDREN IN DENMARK

BY PROFESSOR BUDTZ JØRGENSEN,

Adviser to the National Board of Health.

It was not until 1889, when the School for Dentists, with an out-patient department, was established that the poorer classes of the population had the opportunity of availing themselves of free conservative dental treatment. It was then realised by the dental profession that effective combating of caries must be based upon systematic and early treatment of the teeth, and in 1894 the Dental Association started an investigation of dental caries in 10,000 school-children in Copenhagen. In subsequent years very creditable work was carried out by some few dentists in treating children from the municipal schools gratuitously; in the majority of cases, however, the treatment was only provided in cases of emergency.

The decisive step was taken by the late Professor C. Christensen, then adviser of dentistry to the National Board of Health, who in January 1910 founded the Danish Association for Dental Treatment of Children. The aim of the Association was to promote by an educational campaign and by contributions the erection of municipal dental clinics. In the same year the Association saw the first results of its work for the Municipality of Frederiksberg instituted a school dental clinic, to which the Association contributed 2,500 kroner. The satisfactory result of the Frederiksberg School Dental Clinic brought about the institution of school dental clinics in various municipalities — a development which was, however, severely checked by the housing shortage in the years of the great war.

As the school dental clinic at Frederiksberg has served as prototype for the remainder of the school dental clinics of this country, a brief summary of its equipment and work may be of interest.

The staff at the clinic consists of the school dentist and five assistant dentists, four dental nurses, one of whom in addition acts as a clerk, and a woman attendant.

There are three operating rooms with five operating chairs equipped with an electric dental apparatus, lighting appliances and other operating equipment. The lavatory basins are fitted with hot-water apparatus, and all sterilisation is placed in autoclaves.

The treatment of children in the nine municipal schools, as well as of children of poorer parents resident in the municipality, is voluntary. The treatment is gratuitous during the first year, whereas in subsequent years an annual subscription of 1 krone is paid. The treatment is systematic, including a conservative treatment of the temporary teeth, and the children are examined and treated once annually.

At the first attendance for treatment the children are registered. Every child has a dental record card on which all completed treatments are entered with the usual abbreviations. The card is intended to last till the child leaves school, and is therefore furnished with records on both sides.

For the period from December 13th, 1910, to March 31st, 1920, the clinic has submitted a summary of its work. Only the essential details as to the number of patients, nature of treatment, etc., are given below :

Number of Days	Number of Hours	Number of Patients		Fillings	Extraction		Sealings	Root Treatment	Other Treatment	Number of Cases treated	
		Boys	Girls		Temporary Teeth	Permanent Teeth				Boys	Girls
2,166	7,858	17,871	16,533	42,656	32,669	503	2,524	6,037	2,688	44,929	42,128

“ Number of patients ” includes both patients treated at the first attendance and re-treated patients.

It is worthy of note that only 503 permanent teeth were extracted during the decade under review, or 0.05 tooth per child, which proves how conservative the treatment has been.

At present we have twelve municipal school dental clinics in various provincial towns. In three of these towns treatment is given at the dentist's private clinic ; three rural municipalities have also introduced dental treatment for children. Children receive dental treatment in the following institutions : Det kgl Vajsenhus in Copenhagen (Royal Orphanage), Kindergarten for Deaf-Mutes at Fredericia, Deaf-Mute Institute at Fredericia, Deaf-Mute School at Nyborg, Himmelbjerggaarden (Himmelbjerg Farm), Julemarkesanatorium at Kolding, Kong Frederik den 7endes Stiftelse at Lægerspris (King Frederik VII Foundation) and the State Institute for Persons suffering from Defective Articulation. Similarly, dental treatment is given, in three private schools : De mosaiske Skoler in Copenhagen (mosaic schools), Faaborg Mellem-og Realskole (secondary school), and Herlufsholm lærde Skole (public boarding-school).

In these schools and institutions the treatment has varied considerably ; with a single exception, however, the children have received a systematic dental treatment, including treatment of the temporary teeth.

A few details as to the treatment at the municipal school dental clinics is given below. In 1922-23 the treatment, which is everywhere voluntary, was given to approximately 25,000 children out of 43,000 who were actually entitled to treatment ; in other words, 42 per cent evaded treatment. In most cases a minor consideration is payable on treatment. The expenditure per child has varied between 5 and 9.43 kroners.

The most recently erected and at the same time the best equipped of the school dental clinics in the country is Københavns Kommunes Skoletandklinik (The

Copenhagen Municipal School Dental Clinic), from the annual report of which the following details are taken :

Treatment carried out at Københavns Kommunes Skoletandklinik in the period between January 15th, 1923, and January 14th, 1924 :

Number of Treat- ment Days	Systematic Treatment					Emergency Treatment of Children not entitled to Treatment				Total Numbe of Childre dealt with
	Number of Child- ren	Fillings	Extractions		Other Treat- ment	Number of Child- ren	Extrac- tions	Fillings	Other Treat- ment	
			Perma- nent Teeth	Tempo- rary Teeth						
245	9,439	25,641	364	2,351	2,061	2,083	1,809	1,246	1,455	34,947

Of the 9,439 cases which have received systematic treatment, the treatment actually concerns 6,042 different children, and out of these 3,398 have been treated twice. Emergency treatment is given to those children who are not entitled to treatment at the school dental clinic, the treatment at present being given merely to the younger children.

The report further states that under the heading " Other Treatments " are :

118 X-ray radiographs,
4 maxillary operations,
9 regulations,
1,398 local anæsthetics,
109 nerve treatments.

During the preceding year 96.65 per cent of the children entitled to treatment attended for treatment. Of those failing to attend 41 were sick.

At Københavns Kommunes Skoletandklinik the children are examined and treated twice annually.

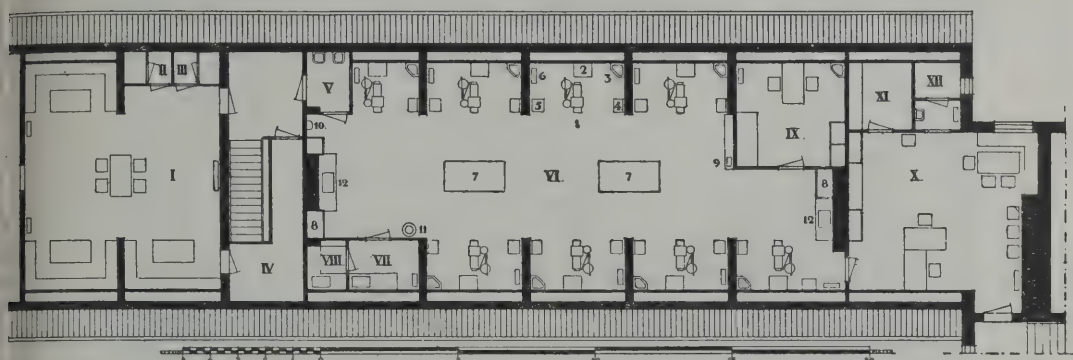
At the opening of the clinic the staff consisted of the school dentist, three assistant dentists, two dental nurses, one woman attendant and one clerk. On August 1923 a fourth assistant dentist and a dental nurse were added to the staff.

The large number of fillings, *viz.*, 25,641, out of 6,042 children, shows the necessity of advancing the cause of child dentistry.

The attached plan (1) and interior (2) give an idea of the equipment and construction of the clinic.

Besides the above-mentioned clinic at Vestenbro, the municipality of Copenhagen as on this year's budget granted the necessary funds for the equipment of a school dental clinic at Nørrebro. The work of this clinic is well on the way, and the clinic that is intended for the treatment of 18,000 children from the municipal board schools residing in this part of the town will be ready for the admittance of patients in the autumn of 1924.

In the following years three more school dental clinics will probably be established in Copenhagen, the result being that all children in the municipal board schools, about 60,000 in all, will be able to avail themselves of a rational dental treatment.

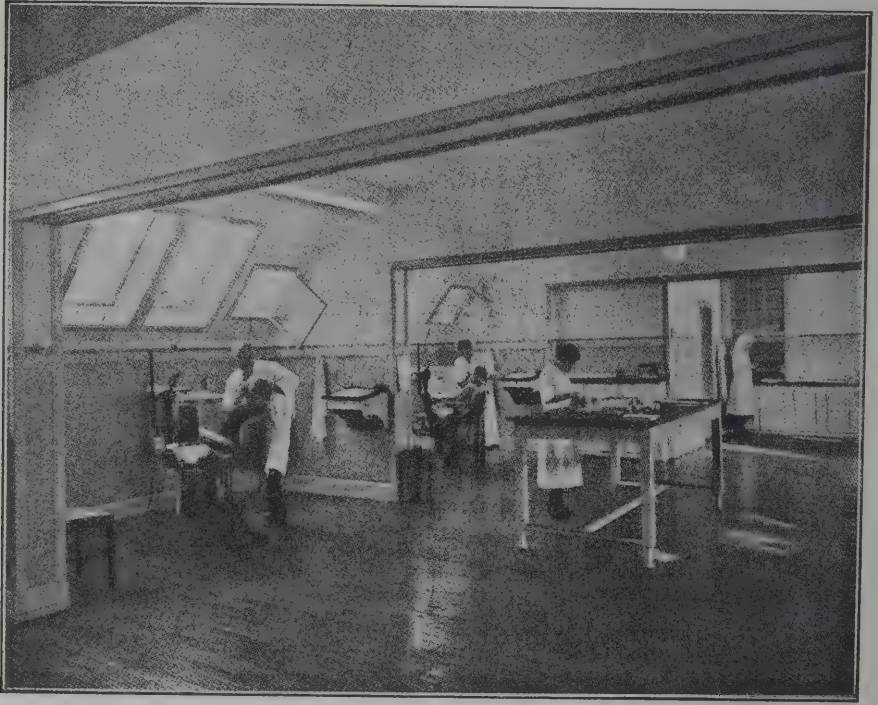


PLAN OF THE SCHOOL DENTAL CLINIC.

I. Waiting-room. II. Lavatory for boys. III. Lavatory for girls. IV. Cloak-room. V. Passage with compartment for rinsing the mouth. VI. Clinic: (1) Dental chair. (2) Instrument table. (3) Lavabo. (4) Desk. (5) Chair. (6) Radiator. (7) Work table. (8) Autoclave for sterilising. (9) Electric furnace. (10) Hot-water heater. (11) Air compresses. (12) Sink. VII. Laboratory. VIII. Dark room. IX. Director's office. X. Office for card-index. XI. Assistants' cloak-room. XII. Lavatory for assistants.

The results hitherto obtained may be regarded as fairly satisfactory, despite the variety of treatment, due to the fact that the efficiency of the various school dental clinics was dependent upon local conditions, but the question of establishing a rational, homogeneous and systematic dental treatment of children by means of grants-in-aid from the State was considered. On December 12th, 1918, the Ministry of Justice (Home Office), at the instigation *inter alia* of Dansk Forening for Børnetandpleje and Almindelig dansk Lægeforening (Medical Society), created a committee for "the investigation of the desirability of taking special measures for the combating of dental diseases". In the following year the committee produced a unanimous report proposing an Act ordering the urban and rural municipalities to introduce compulsory and gratuitous dental treatment of all children in the municipalities. The same point of view is taken by the Educational Committee of February 21st, 1919 (*Skolekommissionen*), which in a majority report proposed that compulsory dental treatment of all school-children of the pupil age should be introduced on the ground that "the

majority consider dental caries to be such a serious social evil that it is absolutely necessary to take steps to ensure a rational treatment of that disease ; such treatment would be most naturally and best established in connection with the schools ”.



THE SCHOOL DENTAL CLINIC.

The legislative proposals submitted by these two committees have not yet resulted in the passing of an Act, but the opinions of the committees undoubtedly represent the lines on which the future development of dental treatment of school-children in Denmark will be conducted.

THE WATER SUPPLY OF COPENHAGEN

COMMUNICATED BY POUL SOERENSEN C. E.,

Director of the Municipal Waterworks of the City of Copenhagen.

During the earliest history of the town, the inhabitants got their water from draw-wells. Excavations have brought to light numerous remains of this kind of well, most of them with a square framing of oak planks. The oldest are estimated at about 800 years. Almost every house seems to have had a well of its own, and besides there were several public wells in the streets and market-places.

As the town grew, this method of supply became insufficient, and at the end of the sixteenth century a new system was introduced : unfiltered surface water was conveyed into the town from some of the lakes now situated within the town but at that time outside its precincts.

Both the main conduits and the branch pipes for the lake water consisted of bored-out tree-trunks, but, the lakes from which the water was drawn being, with one exception, situated on very low ground, the water had to be pumped up from the conduits in most of the houses. A few of the main conduits were the property of the King (the State) ; the others belonged to private associations (" water companies "), which worked them on concessions, and gradually the streets of the town became honeycombed with wooden pipe-lines, the interior diameter of which was only about five inches. The old wells were, however, preserved, chiefly, probably, for military reasons.

While several wells yielded very good drinking-water, the water from the conduit system was inferior : it was turbid, malodorous and unpleasant to the taste. This was due partly to the fact that the water of the lakes used as sources of supply was contaminated with sewage, etc., partly to the fact that the varying height of the ground water caused the water in the conduits to become polluted through leaks in the pipe-joints, with sewage from the latrines and from the inferior deposits, mostly garbage, in which the town was partly built.

As early as 1671, a committee was appointed to examine the possibility of improvements. Among the members of this committee was the well-known mathematician and physician Professor Rasmus Bartholin. The committee made the remarkable recommendation that the surface water should be improved through a process of aeration and filtration, a scheme which was, however, in advance of the time and which was not adopted.

With the continued growth of the town, conditions became worse and worse. To the inferior quality of the water was added another serious drawback : the amount of water was too small during a large part of the year, a fact that was partly due to the lakes becoming choked up with sedge and rushes.

The private water companies had neither the authority nor the means to effect a reform, and, this state of things becoming at length almost intolerable, all the water

companies were abolished in 1812 by Order in Council, and the water supply of the town was placed under a Royal Water Commission.

In order to defray the expense involved by a reform of the water supply, a water tax was levied on all house property within the town on the basis of the aggregate floor area of all the stories of the buildings ; in addition, a special duty was levied on the consumption of water for industrial purposes.

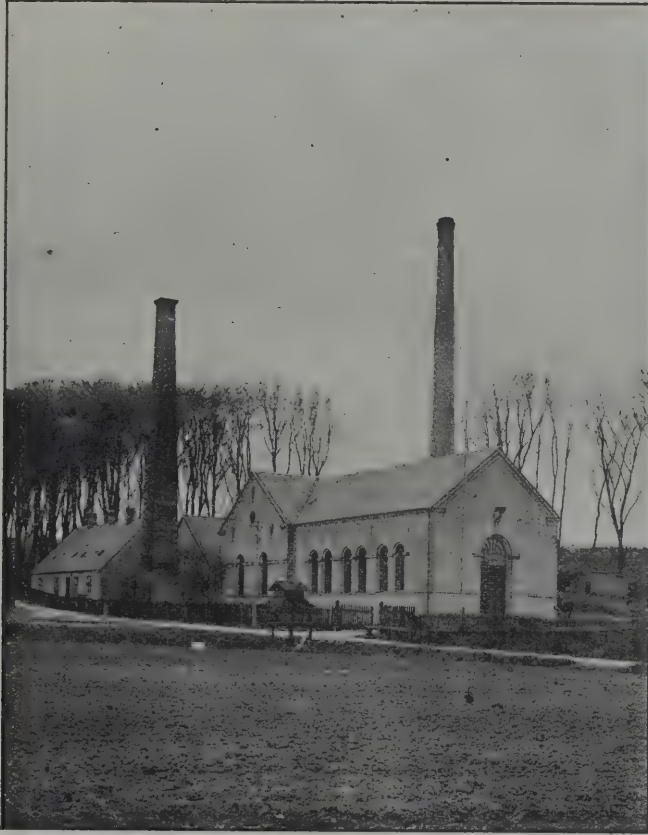


ARTESIAN WELLS AT LAKE SOENDERSOE.

The Water Commission made an attempt to improve the state of the lakes and conduits, but the quantity and quality of the water remained unsatisfactory in spite of all efforts to the contrary, and, in 1849, the municipal authorities decided to offer a prize for the best scheme for a more efficient supply.

A plan drawn up by a Danish engineer, L. A. Colding, was adopted. It proposed to accumulate, in the Damhus Lake, a sheet of water situated outside the town, the water of the Harrestrup rivulet, together with the water of various dug wells and borings which had already been sunk in the valley of the Harrestrup rivulet for experimental purposes. This mixture of surface and subterranean water was conveyed from the Damhus Lake through an open canal, protected from pollution by parallel intercepting ditches, to the two St. Joergen's lakes situated within the town, from which the water was conveyed into sand filters constructed on the early English type.

The filtered water was pumped by steam pumps into a distribution system of cast-iron pipes under a head sufficient to permit water to be drawn from taps in the top stories of all houses in the town. The plan was completed in 1859, and the filters then constructed are still working satisfactorily. The pumps and steam engines, too, are still in use, the latter having, however, undergone some alterations. Statutory provision was made for the protection of the new waterworks, and rules for the payment of water, etc., were likewise fixed by statute.



PUMPING STATION AT LAKE SOENDERSOE.

As the consumption of water grew, the supply was increased by the sinking of new borings near the wells in the valley of the Harrestrup rivulet and by pumping from the wells, the proportion of ground water from deeper subterranean strata being thus increased to one-third of the total supply. Nevertheless, it soon became necessary to make provision for a further increase of the productive capacity of the waterworks.

Having considered various schemes, the municipality, in 1871, bought the Soendersoe, a capacious lake of about 135 hectares, situated at a distance of about 18 kilometres to the north-west of the city. A pumping station was erected near the lake,

the water of which had to be pumped across a ridge from the top of which it was conveyed by gravitation through a trunk main of concrete into the open canal which took the water from the older plant to the Damhus Lake. After the water of Lake Soendersoe had begun to be utilised, the filters repeatedly became infected with algal vegetations ; especially in the summer of 1882 these algal vegetations developed to such an extent that filtration could only with difficulty be carried on, and the water acquired an unpleasant smell and taste.

Already during the first years of the waterworks the beneficial effect on the quality of the water of an admixture of underground water had been recognised. Accordingly, an attempt was made to increase the supply of ground water by the erection of some additional pumping stations in the valley of the Harrestrup rivulet, an attempt which was entirely successful.



THE WATERWORKS IN 1860 (NOW PUMPING STATION AT AXELBORO).

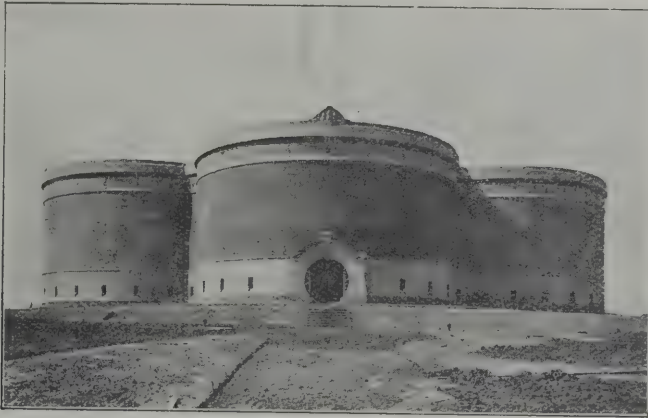
About the same time (in 1884) experimental borings in the vicinity of Lake Soendersoe had revealed the existence, 50 metres below the surface level of the lake, of considerable quantities of underground water, the height to which this water rose being about 6 metres above the level of the lake. This discovery, and the realisation that subterranean water from deep-lying formations offered great advantages, from a sanitary point of view, over surface water, caused a systematic geological and hydrological survey of the environs of Copenhagen through borings to be commenced in 1886 with a view to providing a water supply drawn exclusively from the deeper subterranean strata. This survey, which is still being carried on by the management of the city of Copenhagen municipal water supply, was not long in producing satisfactory results. The older plants, *i.e.*, those in the valley of the Harrestrup rivulet and near Lake Soendersoe, turned out to be situated in the very places best adapted to be utilised as sources of the supply of underground water, and already in 1893 the work had proceeded so far that it became possible to supply the city exclusively with deep-well water, a standard which it has, so far, been found possible to keep up in spite of the rapidly increasing demand.

While there could be no serious objection to conveying the water to the city in open canals as long as surface water was principally used, there seemed little sense in exposing the sterile underground water to contamination in this way. Consequently, covered concrete conduits were substituted for the open canals, the work being completed in 1900.

The surface water, the volume of which is on the decrease owing to the draining of the catchment area, is now used only for industrial purposes by a few factories, which have to pump it up themselves from the open canals, and for renewing the water of various lakes and ponds within the city.

GEOLOGICAL SURVEYS. OCCURRENCE AND COMPOSITION OF THE WATER.

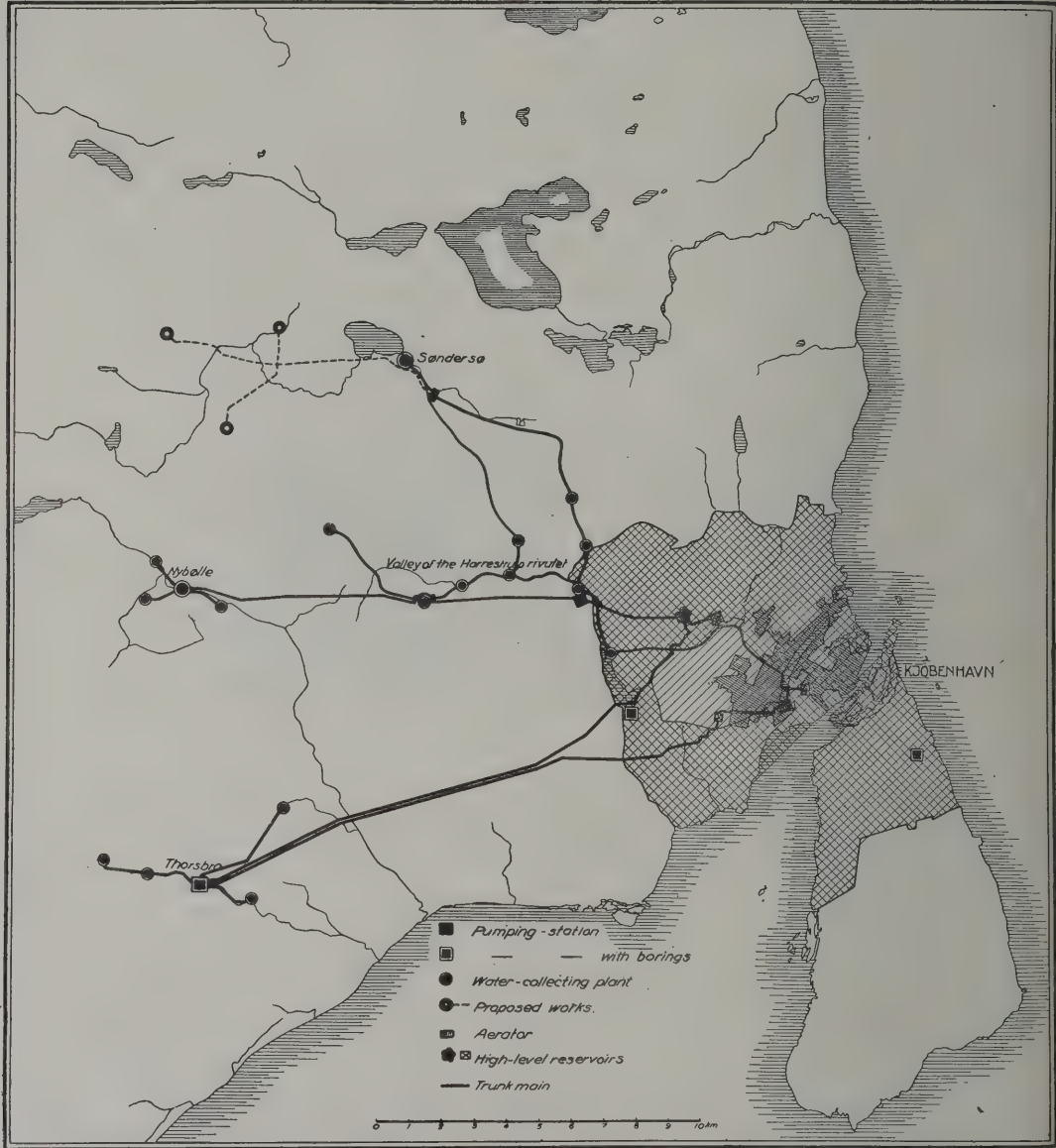
The district in which the present water-collecting plants of Copenhagen are situated is shown in the accompanying plan. The geological and hydrological survey has extended over a considerably larger area, in which, however, it has not yet been completed, this being the case with the district shown here.



HIGH-LEVEL RESERVOIR AT BRØNSHØJ BAKKEGAARD.

In the area in question, the substratum consists of a continuous layer of limestone, the so-called Saltholm limestone, which belongs to the highest subdivision of the retacean period and which is a characteristic feature of certain parts of Denmark. On top of the chalk there are glacial formations : gravel, boulder-sand and boulder lay. The surface of the limestone is uneven, being full of ridges and dales. In places it reaches an elevation of about 40 metres above sea-level, in other places a depth of 35 metres below sea-level. The ground water is principally found in the upper strata of the limestone, which are full of cracks and fissures, and in the layers of gravel, pebbles and boulders situated immediately on top of the surface of the limestone. Numerous experimental borings have made it possible to get a rough relief map of the surface of the limestone and the level to which the subterranean water rises. On this basis, it is possible to determine where a water-collecting plant can most advantageously be placed and to get a notion of the direction in which the ground water is moving and of the subterranean catchment area of the pumping stations.

In one or two places the water is drawn from wells, principally, however, from borings. These have everywhere been carried down into the limestone, and their depths range from 15 to 50 metres. As the ordinary mild-steel pipes used as well-tubings are badly injured by the ground water, asphalt-coated cast-iron tubes are used for the borings. The lower parts of these tubes are pierced by a large number of narrow, vertical slits, through which the water flows freely to the boring, while stones and gravel are kept out.



SURROUNDINGS OF COPENHAGEN WITH THE WATER-COLLECTING PLANTS.

The ground water thus obtained has a uniform temperature of $8\frac{1}{2}^{\circ}$ Centigrade all the year round. It is completely free from germs and contains no noxious substances.

At one station in the valley of the Harrestrup stream where the layers of soil covering the limestone are very thin, chlorine is added to the water at the rate of three milligrammes of chlorine to one litre of unfiltered water. The chlorine contents fall below the limit of the taste and smell in the course of a quarter of an hour. The addition of chlorine is, however, merely a precautionary measure, no pollution of the ground water having as yet been ascertained even in this place. Chemical and bacteriological tests of the water are made at regular intervals both by the medical authorities of the city and by the laboratories of the Copenhagen Municipal Waterworks. The substances contained in a state of solution in one litre of water are as follows :

	Milligrammes
Ammonia (NH_3)	0
Nitric acid (HNO_3)	traces
Nitrous acid (HNO_2)	0
Carbonic dioxide (CO_2) separate and in a state of semi-composition	ca. 120
Hydrochloric acid (HCl)	ca. 35
Sulphuric acid (H_2SO_4)	ca. 40
Lime (CaO)	ca. 135
Magnesia (MgO)	ca. 20
Phosphoric acid (H_3PO_4)	0
Total solids after evaporation and drying at 130° Centigrade. ca.	400

Besides, the water contains small quantities of iron and manganese ; in the water from the so-called Thorsbro works these quantities are so insignificant — 0.05 milligrammes of oxide of iron (FeO) and less than 0.01 milligrammes of oxide of manganese (MnO) to each litre — that the water can be used without further treatment. The rest of the water contains an average of 2.5 milligrammes of oxide of iron (FeO) and 0.2 milligrammes of oxide of manganese (MnO) to the litre. From this part of the water the above substances have to be removed before it can be used. Iron and manganese are, however, easily removed in aerators and filters.

The bacterial contents of the water from the street mains of the city are very small. The 361 test samples taken at random during the last five years from taps in houses within the city have yielded an average of 9.9 germs to the cubic centimetre. The minimum was 0 and the maximum 33 (found once only).

HOW THE WATER IS COLLECTED AND CONVEYED TO THE CITY.

The water-collecting plants fall into three groups :

1. The works at Thorsbro and at Taastrup Valby.
2. The works in the valley of the Harrestrup rivulet and the works at Nyboelle.
3. The works at Lake Soendersoe and the works to the west of Lake Soendersoe.

The *Thorsbro works* were constructed in the years 1905-1913. They comprise 36 bored wells, some of them of an interior diameter of 125 millimetres, some of 190 millimetres. The depth varies from 20 to 50 metres according to local conditions.

The wells are distributed over four water-collecting stations : Solhoej Huse, Thorslunde Thorsbro, and Ishoej, scattered over a stretch of 5 kilometres. During 1915-1916 the Taastrup Valby station was added to the above. This station is situated 3 kilometres to the north-east of Thorsbro and comprises 15 bored wells.

The water from all these five stations is conveyed to a storage reservoir at Thorsbro.

From Taastrup Valby the water has to be pumped to Thorsbro through a pressure main (centrifugal pumps worked by electro-motors, the operation being semi-automatic). The pumps are connected directly with the suction pipe-lines from the borings through a suction air chamber.



ARTESIAN WELL AT THORSBRO.

From Solhoej Huse, which is situated at a considerable elevation, the water from the borings is conveyed through a siphon pipe-line 1.7 kilometres long and 610 millimetres in diameter to a cistern at the somewhat lower Thorslunde station, the borings of which send their water through another siphon to the same cistern, from which the water flows into the storage reservoir at Thorsbro through a concrete gravitation conduit 2 kilometres in length and 950 millimetres in diameter. The water from the borings at Thorsbro and from Ishoej 2 kilometres further on is conveyed through five siphons to a large pumping cistern at the Thorsbro station, from where it is pumped into the storage reservoir by centrifugal pumps worked by Diesel motors.

The engine-house at Thorsbro in which these pumps are placed also contains the pressure pumps which pump the water of the whole plant — 40,000 cubic metres per

day — into Copenhagen. They are high-pressure centrifugal pumps worked by Diesel motors ; they pump the water of the storage reservoir through two cast-iron trunk mains 18 kilometres long and 650 millimetres in diameter into two high-level reservoirs situated in the city. These are the high-level reservoir at Broenshoej Bakkegaard and the reservoir in the Soendermark.

The water from the original Thorsbro works contains such a small amount of oxide of iron (0.05 milligrammes Fe O to the litre) that it is used without undergoing any treatment whatsoever, but in the water from Taastrup Valby the amount of oxide of iron has increased so much in the course of time (*circa* 1 milligramme Fe O per litre) that it is now necessary to subject it to a treatment of airing and filtering.

This takes place before it is conveyed into the storage reservoir at Thorsbro in a filtering plant which was constructed there in 1923. The filter, which is an open rapid filter with a working speed of 4 metres per hour, is capable of treating 12,000 cubic metres per day.



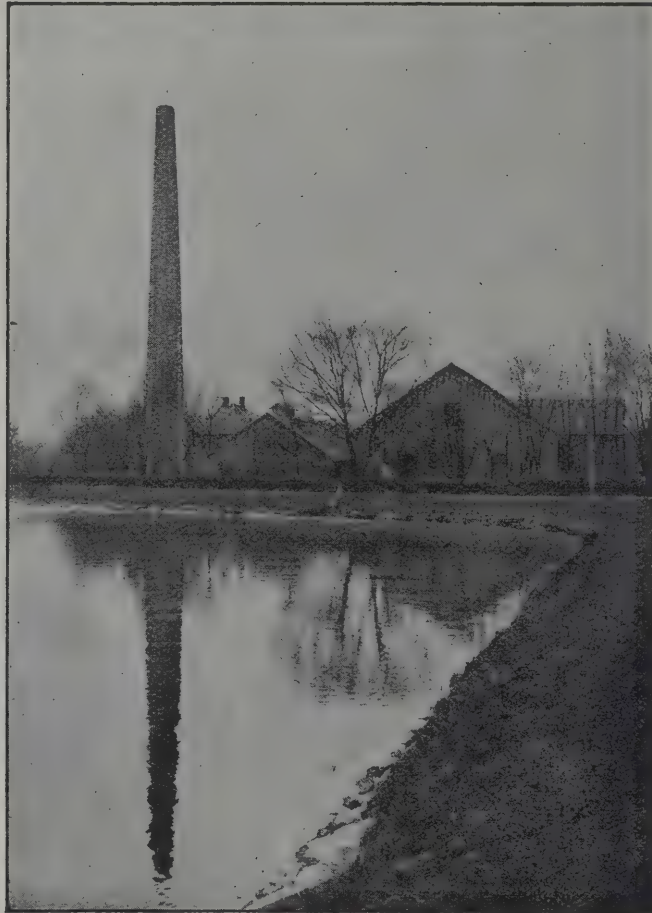
THE WATERWORKS AT THORSBRO.

The works in the valley of the *Harrestrup stream* consist of nine small pumping stations with an aggregate productive capacity of about 30,000 cubic metres per day, while the *Nyboelle works*, situated at some distance to the west, have a capacity of 0,000 cubic metres per day.

The nine small stations in the valley of the *Harrestrup stream* have been constructed at various periods, one or two of them dating back from the middle of the last century. In the case of the older stations, the water is taken from masonry wells, supplemented, however, in most cases with bored wells connected with the pumping well by syphons. In the case of some of the more recent stations, the pumps are connected directly through a suction air chamber, with suction pipe-lines from the bores. Each of the small stations has its own pumping plant. Various descriptions of motive

power are in use, but the electrification of the whole system has now been commenced the intention being to work them all from one central station. The water from all the stations is pumped into one concrete gravitation conduit.

The Nyboelle works were constructed during the years 1917-1920. They consist of three water-collecting stations scattered over a distance of 3 kilometres. The water is taken from 46 tube-wells about 25 metres in depth.



THE PUMPING STATION AT GAMLE KONGEVEJ.

The general scheme is the same as that of the Thorsbro works, the water from the bored wells being conveyed through four siphon pipe-lines into a pumping well situated at the midmost water-collecting station, Nyboelle. From there it is pumped through a cast-iron pressure main 650 millimetres in diameter into the city, where it is

subsequently aerated and filtered. The pumps are high-pressure centrifugal pumps worked semi-automatically by electro-motors.

The works at Lake Soendersoe comprise 81 tube-wells about 50 metres in depth. Of these wells, 71 overflow into a concrete gravitation conduit of a length of about 2 kilometres, which has been sunk 3 ½ metres into the low-lying ground along the edge of the lake. From the remaining ten borings, the water is drawn through a siphon. The aggregate volume of water is about 25,000 cubic metres per day. A pumping station, provided partly with piston pumps worked by steam-engines, partly with centrifugal pumps worked by a Diesel motor, pumps the water into an aerator on the crest of the high ground surrounding the lake ; from there the water flows in the direction of the city through a concrete gravitation conduit. Immediately outside the western boundary of the city this conduit joins the gravitation conduit from the Harrestrup stream valley works, continuing inside the city as one concrete conduit of a diameter of 1.4 metres.

In the district to the west of Lake Soendersoe, the Copenhagen Waterworks owns three estates on which it is intended to erect new water-collecting stations calculated to yield an aggregate volume of 20,000 cubic metres per day.



THE WATERWORKS AT ISLEVBRO.

Each station will have its own pumping plant, consisting of centrifugal pumps worked by Diesel motors. The pumps will communicate directly through suction air chambers with the suction pipes from the tube-wells, and the water from all the three stations will be conveyed through one pressure main to the aerator constructed for the water of Lake Soendersoe, from where it will flow through the gravitation conduit described above.

The construction of one of these stations — the one to the north-east — was commenced in 1923.

WATERWORKS WITHIN THE CITY.

With the exception of the water from the Thorsbro works, all the water is cleansed from iron in plants situated within the city and pumped into the distribution system.

A walk along the concrete conduit described above, through which the water from the Harrestrup brook valley and the Soendersoe stations flows, takes one to the Islevbro waterworks. These works, constructed during 1918-22, are situated on the western

boundary of the city and are furnished with airing plant, filters, and pumping engines. Here the whole output of the Nyboelle station (about 20,000 cubic metres per day) is treated, the trunk main from Nyboelle issuing into the aerator of the Islevbro works. In addition, the latter treat a similar volume of water, which is raised from the adjacent concrete conduit by three centrifugal pumps worked by electricity.

The whole plant for the purification of the water is concentrated in one building consisting of a substructure of concrete with a superstructure of ferro-concrete and covering an area of 6,400 square metres. The plant is divided into four uniform sections, each consisting of an aerator with a precipitation chamber, a coarse pre-filter and a sand filter. Each of these subdivisions may be put out of action independently of the others.

In the aerator the water flows from a broad elevated central channel into a system of smaller channels, over the edges of which it falls in narrow jets on to a floor of iron sheets pierced with holes, which again divide the water into a rain-fall. The total drop of the water is about 4 metres. The fall through the air causes the water to absorb about 10 milligrammes of oxygen per litre, and the oxygen transforms the ferrous salts contained in the water into insoluble ferric hydroxyde. The completion of this transformation takes about an hour, and it is accordingly necessary to have a precipitation chamber of suitable dimensions under each aerator.



PUMPING STATION AT BORUPS ALLE:

From the four precipitation chambers the water is conveyed to the four pre-filters, which have a total area of about 340 square metres. The pre-filters are, up to a height of 2 metres, filled with stones decreasing in size upwards through successive layers, beginning at the bottom with stones the size of a fist and ending at the top in a layer of stones of a diameter of 4 to 6 millimetres. The water enters at the bottom and escapes at the top. The filters are cleaned by opening a big valve at the bottom and letting the water flow back through the stone layers with great rapidity, thus removing the iron deposited on the stones. The rinsing action of the water is aided by the introduction of compressed air under the layers of the filter. The pre-filters work with a rapidity of filtration of 6 metres per hour and remove about 75 per cent of the iron contained in the water.

From the pre-filters the water is conveyed into the four sand filters, which have an aggregate area of about 3,400 square metres. The water passes through these from above downwards; they are constructed in the usual manner. The sand layer has

a thickness of about 700 millimetres, the size of the grains being about $1\frac{1}{2}$ to 2 millimetres, and the water percolates at a speed of 0.6 metres per hour. Automatic contrivances regulate the flow so as to ensure the equal working of all four filters. The filters are cleaned by the removal of the topmost unclean layers of sand, this being made fit for further use by passing through a washing machine.

The filtered water, the iron and manganese contents of which are respectively less than 0.05 and 0.01 milligrammes to the litre, flows into a service reservoir with a capacity of 10,000 cubic metres, from where it is pumped into the distribution system of the city by horizontal piston pumps worked by Diesel motors.

Some distance farther inside the city, on the concrete conduit, stand the Borups Allé waterworks, built during 1901-1903. They comprise a filtering plant with coarse pre-filters and sand filters of exactly the same type as those of the Islevbro works, only on a smaller scale (three sand filters with an aggregate area of 1,500 square metres). The water from the concrete conduit flows into the filters by gravitation. The pumps are horizontal piston pumps worked by steam engines.

The water from the concrete conduit which is not used by the two waterworks described above flows into the filters at Vestersoegade. These comprise one pre-filter and eight sand filters, most of which date back from the earliest days of the waterworks. Their sand layers are somewhat finer grained than those of the more recent filters; they work with a maximum percolating speed of 0.2 metres per hour, and they are not covered. The construction is in several respects somewhat primitive, but the filters work fairly satisfactorily.

Next to the filtering station at Vestersoegade are the two large, open, low-lying reservoirs called the St. Joergen's lakes. Into these the concrete conduit overflows when the waterworks cannot use all the water it transports. Conversely, water may be drawn from the St. Joergen's lakes (which contain water from the Copenhagen collecting plants for underground water only) into the filters at Vestersoegade in case of an unexpected increase of the consumption. Also the St. Joergen's lakes form a valuable general reserve for the water supply.

The water from the Vestersoegade filters is collected in a clean-water cistern, whence it is conveyed to the pumping stations at the Axeltorv and at Gamle Kongevej, where it is pumped into the distribution system.

The pumping station at Gamle Kongevej has, however, a special task to perform.

It has already been explained that half the output of the Thorsbro works — *i.e.*, 20,000 cubic metres per day — are pumped into the reservoir in the Soendermark wood. While the pressure in the mains of the distribution system is approximately 48 metres above sea-level, the maximum water level of the Soendermark reservoir is only 30 metres above sea-level. It is therefore necessary to pump the water of the reservoir into the distribution mains. This is done by the pumping station at Gamle Kongevej, the reservoir being emptied during those hours of the day when the consumption is largest.

THE DISTRIBUTION SYSTEM AND THE HIGH-LEVEL RESERVOIR.

The distribution system is constructed according to the circulation scheme, the mains being connected with each other like the meshes of a net. The aggregate length of the street mains is approximately 500 kilometres, the material used being mostly cast-iron pipes; mild-steel pipes have, however, been used for one or two lines. On the mains there are about 3,000 fire-hydrants, 71 drinking fountains, and about 2,000 sluice-valves by which individual stretches of the mains may be closed. The trunk mains to those parts of the city situated on the island of Amager have been carried under the harbour in two tunnels roughly cut in the firm limestone about 20 metres below the level of the sea.

In order to keep up a uniform pressure in the distribution system, the latter is connected with a high-level reservoir situated at Broenshoej Bakkegaard, at the highest point within the territory of the city. This reservoir, which serves the additional purpose of equalising the variations of the water consumption (the consumption per hour varies between 1.7 per cent and 6.1 per cent of the consumption during 24 hours), consists of five circular ferro-concrete tanks placed in a circle. Each tank has a diameter of 20 metres, a depth of 6.3 metres, and a capacity of 2,000 cubic metres. The highest water-level must be 48 metres above the sea, and in order to gain this object the tanks have been placed on columns 7 metres high. One casing of ferro-concrete surrounds all the tanks. The central interval between the tanks forms a circular chamber containing the regulating apparatus of the reservoir and, in addition, three automatic pumps worked by electricity. The latter pump water from the high-level reservoir into a small part of the town which is situated at an elevation of more than 20 metres above sea-level and which forms a special distribution zone with a higher hydrostatic pressure than the rest of the city.

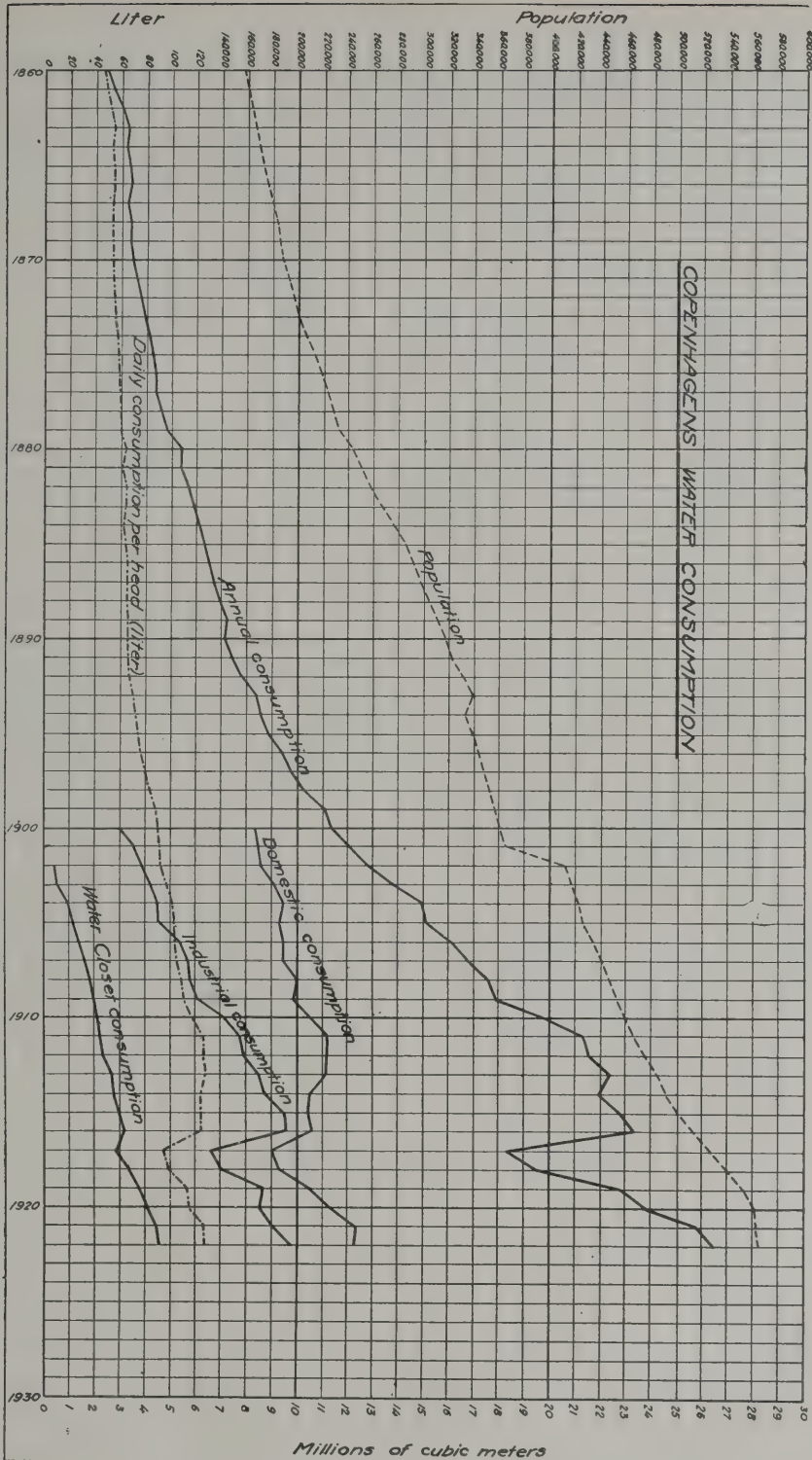
PAYMENT AND WATER CONSUMPTION.

The basis on which the payment for the water is calculated is fixed by statute. Water used for domestic purposes is not metered. It is paid in the form of a water-rate calculated on the basis of the aggregate floor area of each house. The payment of this rate confers the right to draw water from one tap in the courtyard of the house, one tap in each kitchen and one bathroom for each family. For each additional tap for domestic purposes a fixed annual surtax is paid.

The consumption of water for water-closets is ascertained by a meter in each house. A fixed sum is paid for each seat, for which a consumption of 25 cubic metres during six months is allowed. Any additional consumption has to be paid for at a high price per cubic metre.

The number of water-closets on March 31st, 1923, was 113,500.

Water for industrial purposes is also metered and paid per cubic metre. The water-meters used are mainly wing-wheel meters with dry registers.



COPENHAGEN'S WATER CONSUMPTION
(MILLIONS OF CUBIC METRES).

The following table shows the size of the population and the consumption of water since the works were first constructed :

Year	Population of the City of Copenhagen	Annual consumption of water (cubic metres)	Consumption per day		Average consumption per head per day (litres)
			Average (cubic metres)	Maximum (cubic metres)	
1860	155,000	2,496,000	6,800	8,900	44
1870	181,300	3,460,000	9,500	13,700	52
1880	234,900	5,365,000	14,700	20,800	63
1890	316,100	7,163,000	19,600	27,200	62
1900	358,300	11,311,000	31,000	43,500	87
1910-11	459,800	19,701,000	54,000	75,600	117
1920-21	562,000	23,850,000	65,400	82,000	116.3
1921-22	562,600	25,820,000	70,700	94,600	125.7
1922-23	570,000	26,470,000	72,500	93,900	127.2

It will be seen that the consumption of water has increased at a much greater rate than the population. This is due to an increase in the consumption for industrial purposes and to the introduction of water-closets. The distribution of the average consumption per individual per day — *i.e.*, 127.2 litres — is as follows: about 59 litres for domestic purposes, 50 litres for industrial purposes and 18.2 litres for water-closets.

A diagram showing the growth of the population and the water consumption is appended. It shows clearly the restrictions made necessary during part of the Great War and almost entirely effected voluntarily, the public being called upon to exercise the greatest possible economy.

In addition to the volume of water stated in the table and the diagram, the City of Copenhagen Waterworks have since 1914 furnished the neighbouring municipality of Frederiksberg with a volume of water amounting to nearly 10 per cent of the annual consumption of Copenhagen.

WATERWORKS OUTSIDE COPENHAGEN

BY S. MALM,

Civil Engineer, M.T.F., F.R.T.

In the geological period known as the glacial era, Denmark was covered with ice, which, when it melted, deposited alternating layers of gravel, sand and clay.

Almost throughout the whole of Denmark the upper strata consist of these glacial deposits, which often reach a considerable thickness. Below the glacial deposits, the subsoil consists of chalk, limestone, and tertiary sands and clays.

The ordinary wells from which the water supply of the country districts is drawn generally get their water from the upper strata, and it is therefore a fact of the greatest importance that water of excellent quality is found in the glacial deposits. The water which collects in the cavities of the chalk and limestone strata is particularly good from a sanitary point of view, being sterile when the strata in question are situated sufficiently far below the surface.

It is, accordingly, only in exceptional cases that surface water has to be used.

The water supply of the country population is generally drawn from brick-built wells. When these are protected from pollution from above and have a depth of at least five or six metres, which is generally the case, they are a perfectly safe source of water supply for farms, and the only precaution necessary is to take care that the wells are so constructed as to fulfil the requirements of the sanitary regulations as regards the prevention of pollution.

Where the country population is congregated in closer settlements, villages, etc., separate wells for each house cease to be a satisfactory source of water supply, and it is therefore very usual for the inhabitants to co-operate in the building of waterworks. The construction of such waterworks began about fifty years ago. Till 1900, only 62 village waterworks had been constructed, but lately the number has increased considerably, so that there are now about 1,200 village waterworks, supplying about 34,000 houses.

Owing to the importance of these waterworks, the sanitary authorities have collected information about them through the medical officers. From this it appears that the sources of supply of the village waterworks were as follows :

	Per cent.
Borings	about 15
Wells deeper than six metres	» 57
Wells less than six metres deep	» 6
Natural springs	» 21
Surface water	» 1

It will be seen that, as far as the sources of supply are concerned, only the works taking their water from wells less than six metres deep or using surface water (both of

which types together constitute only 7 per cent of the total number of works) can be said to be unsatisfactory ; that is, on the assumption that the other works take proper precautions to protect their water from pollution. In the other works, the water coming from deeper strata generally contains very few germs or is sterile. In such works it is therefore unnecessary to purify the water of its germ contents.

The water collected by the works is generally hard and only in exceptional cases below 10 (German) degrees of hardness. The chlorine contents are often considerable, and the water generally contains iron, frequently more than 1 milligramme to the litre. In spite of this fact, few of the works are furnished with iron filters.

As mentioned above, the villages are largely served by waterworks. This is the case to a still larger extent with the provincial towns, only seven out of the 79 towns of the country being without a waterworks of their own ; these seven towns contain less than 2 per cent of the total population of the provincial towns. The oldest waterworks of the provincial towns were established about 1850, and as early as the end of the last century most of them had their own works. By far the greater number of these provincial works collect ground water from borings, while a minority get their supply from wells, and only two supplement their supply of ground water with surface water. No waterworks use surface water exclusively.

The chemical contents of the water are, generally speaking, the same as those of the village waterworks, but most provincial towns have filters for the reduction of the iron contents of the water. Sand filters are generally used, but in a few cases pressure filters are employed. The maximum rapidity of percolation is on an average about six metres per day. Water is generally supplied for domestic purposes without being metered. Only in eight towns are meters used for this purpose. Water for industrial purposes is almost invariably metered. The same is frequently the case with water for water-closets. The installation of water-closets has increased rapidly during recent years, and it is estimated that in the provincial towns there is on an average one water-closet for every thirteen persons. In Copenhagen, there is one for each five persons. In the provincial towns for which information is available, there is only one bathroom for each 85 persons.

The average consumption of water in the provincial towns is about 135 litres per consumer per day, or a little higher than in Copenhagen, where it is about 127 litres. The average consumption for domestic purposes is computed at from 80 to 90 litres per consumer. The maximum consumption is generally about 50 per cent higher than the average.

In towns where water for domestic purposes is metered, it is paid for at from 12 to 50 oere per cubic metre. In one town the price is still higher. In towns where the water-rate is calculated on a basis of the number of taps, the position of the consumers is more favourable, the rate varying between 3 and 10 kroner per tap per annum. The water-rate of the provincial waterworks, which are under municipal control, is generally just sufficient to cover working expenses, interest, and contributions to a sinking fund. Both the average revenue and the average expenditure of the waterworks per cubic metre of water supplied were in 1920 about 16 oere per cubic metre. It will thus be seen that the water-rate cannot be called exorbitant, and the public accordingly uses the waterworks to a large extent, so that more than half of the total population of the country is supplied with water from waterworks. The investigations of the National Board of Health have demonstrated that the larger and most of the middle-sized waterworks are perfectly satisfactory from a sanitary point of view, while a few of the middle-sized and small works have certain shortcomings, which, without making themselves felt under ordinary circumstances, might on occasion involve a danger of pollution.

The geological and hydrological conformation of the country are such that all reasonable sanitary precautions may be taken in the construction of waterworks without necessarily entailing much expenditure, and, as the Government is fully alive to the importance of the protection of ground water and the waterworks, a bill has recently been drawn up to provide for such protection. The bill proposes to authorise the sanitary authorities to interfere in the construction and working of waterworks, a provision which is intended, together with the sanitary regulations, to safeguard that valuable national asset, the sterile ground water, against ignorant or wilful pollution.

COPENHAGEN'S DRAINAGE SYSTEM

BY A. C. KARSTEN,

Chief City Engineer of Copenhagen.

The situation of Copenhagen¹ immediately on the Sound, in which there is a fairly powerful current during the greater part of the year, has from ancient times offered facilities for the drainage of the city, since the Sound is capable of receiving exceedingly large quantities of waste water without becoming polluted and without the sanitary and æsthetic drawbacks which handicap the drainage of other large towns situated on rivers with comparatively little volume of water or on bays with less favourable current conditions than those prevailing in the Sound.

The city is situated on both sides of the channel, between Sealand and the Island of Amager, which constitutes the excellent harbour of the city. The portion of the city lying on Amager to the east of the harbour is, however, far smaller than that lying on the Sealand side. The area is rather flat and partly low-lying; consequently, pumping to a considerable extent is employed in the drainage system.

In consequence of the topography and the expansion of the city, the drainage system is divided into the drainage of the inner (older) portion of the city and the drainage of the outer districts. These are treated separately in this paper.

DRAINAGE OF THE INNER CITY.

As long as the city was small and the quantity of sewage inconsiderable, it was possible, without causing any particular inconvenience, to discharge the sewage into the harbour and the adjacent portions of the Sound and into the canals which, from the harbour, intersect parts of the old city (Slotsholms quarter and Christianshavn).

In 1860 to 1880 such a system of drainage was constructed in connection with all the buildings then in existence, discharging directly into the harbour, the canals and the sea. The sewers were constructed to carry off the dry-weather flow as well as the rain-water, and were laid with a sufficient gradient to keep them clean without special cleansing by flushing or by mechanical aids; this principle has been adopted in drainage systems constructed since.

The smaller sewers are constructed of glazed clay pipes, but vitrified bricks are used for the large sewers.

In the more recent drainage systems, the use of concrete has been adopted for the large sewers, and in Copenhagen these have always lasted very well.

¹ In this article Copenhagen includes Frederiksberg, which has its own municipal administration but topographically constitutes a portion of Copenhagen, which, moreover, surrounds it on all sides.

It was quite evident at an early period that the discharge of sewage into the harbour could be considered only as a temporary arrangement, and that sooner or later a more rational solution of the drainage question would have to be undertaken. Between 1880 and 1890, the quantity of sewage had already increased to such an extent that serious inconveniences began to be felt in those portions of the harbour where the current was not so strong, as in these places deposits of sewer sludge occurred which in the summer caused bad smells. Moreover, the harbour authorities considered it desirable to diminish the strong current through the harbour, which was at times rather troublesome, by building a dam to the south of the harbour, between Amager and Sealand, with sluices for navigation and for the freshening of water in the harbour. The building of such a dam, of course, made the condition of the harbour, from a sanitary point of view, considerably worse. Further, a demand arose for the general introduction of water-closets, which could under no circumstances be permitted as long as the sewage was discharged directly into the harbour and canals. *Chas. Ambt*, city engineer at the time, prepared a scheme to rid the harbour channel of the daily dry-weather flow, and this scheme was carried out between 1892 and the beginning of the present century.

The scheme included the whole city as it was at that time, and consisted of the following general arrangement.

The daily dry-weather flow was cut off from the harbour and canals and conducted out to the deep channel to the east of Amager known as " Kongedyb ". For this purpose, intercepting sewers were laid along the harbour and canals and through special chambers constructed at the points of their intersection with the sewers they receive the dry-weather flow from the latter and conduct it to a pumping station on Amager. The sewage is from here pumped through a conduit into the sea at a great depth, the conduit being laid in a channel dug out at the bottom of the sea.

There are two main intercepting sewers from the portion of the city on the Sealand side — one northerly and one westerly. The northerly begins at the north-end of the harbour and continues along the free port and the inner harbour to a point a little to the north of Knippelsbro (bridge), whence it goes under the channel of the harbour across the Christianshavn quarter to the pumping station at Klovermarksvej (road) on Amager, known as the main pumping station. The westerly main sewer begins at the railway goods sheds and follows the railway track to the immediate south of Langebro (bridge), whence it is conducted under the channel of the harbour over to Amager, continuing along the moat to the main pumping station.

The northerly main sewer receives intercepting branch sewers at the Nyhavnskanal, the Slotsholmskanal and Christianshavns Kanal (canals), and the westerly main sewer receives intercepting branch sewers from the Slotsholmskanal, Islands Brygge and two easterly situated sewerage systems on Amager. Besides these two main sewers, there has recently been added an intercepting sewer from the south, which drains the inner closely-built part of the suburb Sundbyerne. The main sewers have as a rule so steep a gradient that they are self-cleansing. Only in inverted syphons, etc., have arrangements been made for flushing. This is done partly by penning up the sewage water and partly by the introduction of sea-water from the harbour.

To avoid the use of excessively deep sewers, pumping stations have been built at several places where the sewage-water is pumped up into the intercepting sewers,

which therefore can be laid at a higher level. To the north and west there are large pumping stations of this kind, at the free port and in the railway area respectively, and three other smaller ones have been built at the Slotsholm and Nyhavn.

The intercepting sewers take the daily maximum dry-weather flow from their respective drainage areas, together with an equal quantity of rain-water.

The surplus rain-water is conducted through storm-water overflows direct to the harbour. An examination of the rainfall conditions in Copenhagen for a series of years has shown that, by adopting this system for the intercepting sewers, impure water is discharged into the harbour only about 65 times a year, and a considerable number of rainfalls are so small that the effect of the storm-water overflows, as regards the pollution of the harbour, will be quite unnoticeable. After one of the rare heavy downpours, the pollution of the harbour can be plainly seen, but on account of the favourable current conditions, the water becomes clear again in the course of a few hours.

In spite of the low grade of dilution adopted, the particularly dirty water from the streets, yards and roofs, which is the first to run off during a shower of rain, is received by the intercepting sewers, as the whole sewerage system must be filled before the overflows begin to act, so that the first lot of filthy rain-water is always pumped to the Kongedyb.

For the outfalls into the narrow canals and the outlets from the public slaughter-houses — which will be dealt with later — there is a simple arrangement by which the overflows do not begin to act until the degree of dilution of the sewage-water has been considerably increased.

The southerly main sewer from the suburb Sundbyerne carries to the pumping station, during rain, a volume of water four times that of the maximum dry-weather flow; the storm-water outfalls for this system consist only of open channels.

Experience has shown that, by adopting the degree of dilution chosen, the water in the harbour can be kept perfectly free of noxious impurities caused by the discharge of sewage, and a drainage system and pumping works of a moderate size have been sufficient to obtain these results.

The sewage carried by the intercepting sewers is pumped out into deep water at the Kongedyb through the pumping conduit. The outlet itself lies at a depth of about 11 metres of water at a distance of about 1,450 metres from the shore. The pumping conduit consists, on land, of a double 1.25-metre cast iron pipe and, in the sea, of a double pipe laid at the bottom. A double pipe has been adopted in order to ensure a sufficient velocity of water at any time and so avoid the deposit of sludge in the sewer, only one of the pipes being used when the discharge of water is too small. The portion of the sewer which lies in the sea nearest the shore in shallow water is constructed of reinforced concrete and made in a cofferdam, while the outer portion in deep water is a wooden drain made in pieces of about 30 metres in length. The laying down and putting together of this part of the sewer was done with the assistance of divers.

The correct position of the outlet is of vital importance for the whole system. Observations of the current made six times a day for a series of years gave the following results: 49 per cent of the surveys made show a south-westerly current, 31 per cent a

north-easterly current, 7 per cent a varying current, and only 13 per cent of the surveys show no current at all. The current generally runs in one direction for at least twenty-four hours and as a rule continues in the same direction for several days ; the average speed of the current is about 0.5 metres per second ; it is, then, obvious that the depositing of sewer sludge and the inconveniences arising therefrom will be eliminated. Generally only very slight traces of the sewage outlet can be observed and then only in its immediate vicinity. In very calm weather a greasy film may form on the

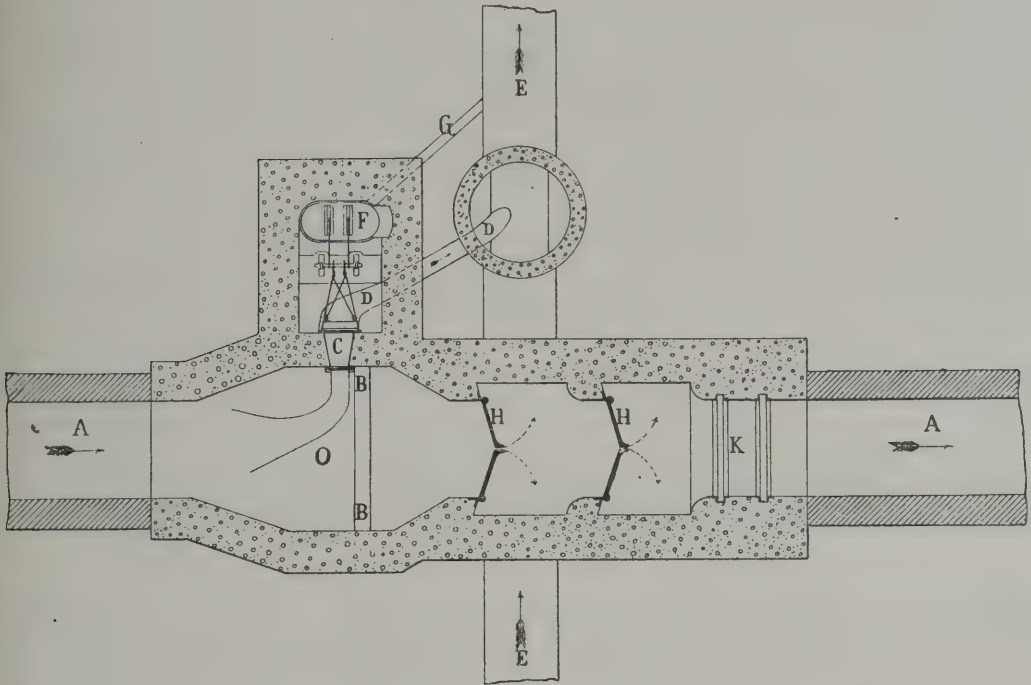


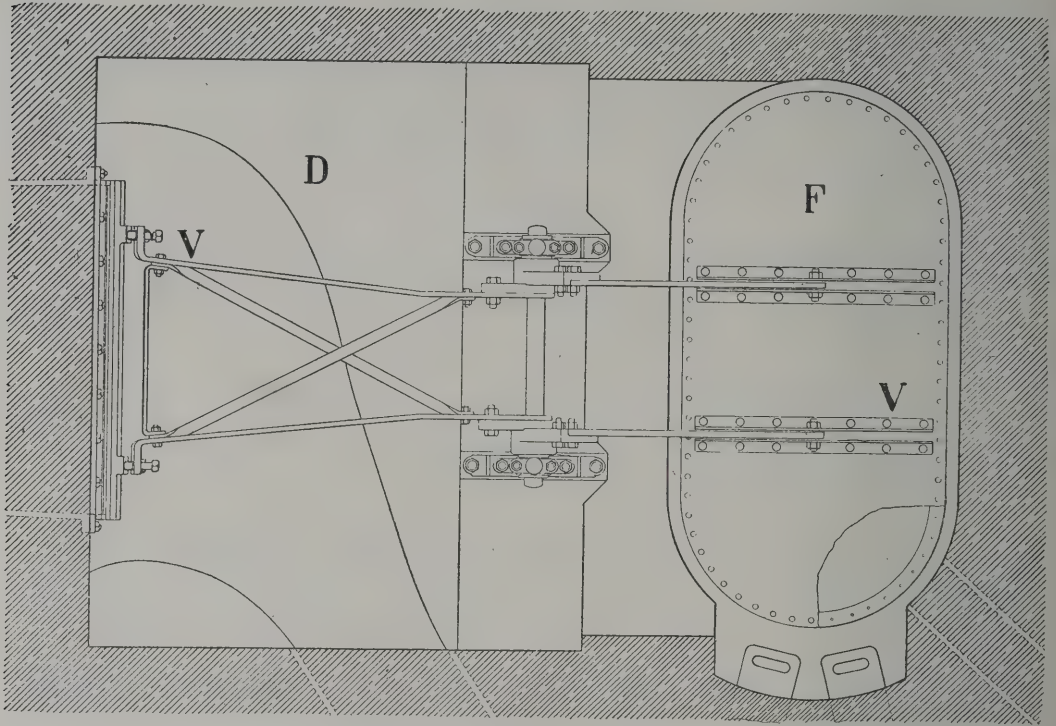
FIG. 1. — PLAN OF A TYPICAL AUTOMATIC REGULATING CHAMBER.

surface of the water extending for about a couple of hundred metres in the direction of the surface current, but this disappears as soon as the sea becomes in the least rough. The Hygienic Institute of the University has repeatedly instituted investigations as to the effect of the outfall on the sea — most recently by *Dr. Bondo* — but no inconvenience could be shown, though the crude sewage from a population of about half a million people is now discharged through this outfall. .

Of the details of the system, I will briefly describe the *automatic regulating chambers* which ensure the intercepting sewers the supply of the proper quantity of water from the ordinary sewers, the different *inverted syphons* under the harbour, and the *pumping stations*.

Regulating chambers are constructed as indicated in Fig. 1 and Fig. 2, which show a typical chamber in its usual form. The existing sewer A, which originally discharged

into the harbour, is interrupted at the point of intersection with the deep-lying intercepting sewer E, and the chamber shown is substituted. The waste water from the



Plan.

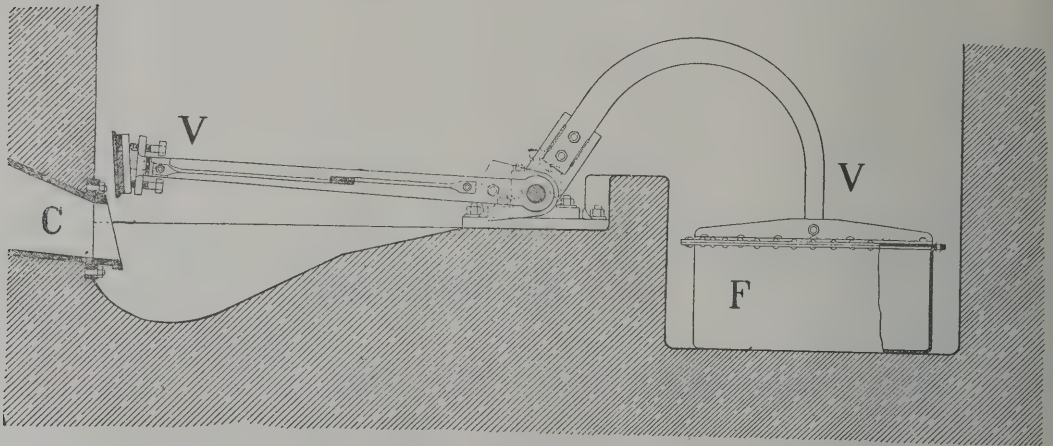


FIG. 2. — PLAN AND LONGITUDINAL SECTION OF REGULATOR.

sewer — during rain with the adopted dilution of rain-water — runs along a bottom channel through the flap-valve C into the regulating chamber, and from there it is carried by pipe D to the intercepting sewer. The flap-valve C, which is constructed

of cast iron and which at the end facing the regulating chamber has a flat rectangular form, can be shut off by the regulator. The regulator consists, as shown in Fig. 2, of a flap, corresponding in size to the opening of the flap-valve, attached to the lever V, which is furnished with a float F at the other end. The flap as well as the valve seat are faced with gunmetal to ensure a water-tight closing. The float is operated by the rise and fall of the water in the intercepting sewer, the connection pipe G putting the float basin into direct communication with the intercepting sewer below the chamber. By this arrangement, the regulator can be so adjusted as to shut off the flow from the sewer as soon as the water-level, and with it the discharge, in the intercepting sewer has risen to the calculated height. During heavy rain, when the water in the intercepting sewer rises above this height, the water in the sewer will be penned up and go through the overflow B to the harbour.

As the water-level in the harbour during rough weather may rise to from 1 to 1.5 metres over daily water-level, two flap-valves, have been provided in each chamber to prevent the sea-water entering the sewage system. The flaps are constructed of cast iron, faced with white metal or, in the case of the smaller flaps, with rubber.

Such regulating chambers are placed at nearly all points of intersection between the sewers and intercepting sewers. The exceptions are the sewers which discharge into the previously mentioned narrow canals, Slotsholmskanal and Christianshavns Kanal and the sewer from the slaughter-houses. In these latter sewers the regulators have been omitted so that the chambers have only the overflow and high-water flaps together with the connection pipes to the intercepting sewer. During rain, therefore, when the water-level has risen so high in the intercepting sewers that the regulators shut off the sewers, the sewers not provided with regulators preferably are pumped out, so that, as far as they are concerned, the overflows begin to act only when there is a higher degree of dilution than usual, which is just what has been aimed at on account of the less favourable current conditions prevailing in the narrow canals.

Of the *syphons* under the harbour and canals, particular mention must be made of three for the northerly main sewer under Nyhavn, the harbour channel and Christianshavns Kanal and one for the westerly main sewer under the harbour channel.

These syphons, like the pumping conduits, are constructed as double sewers separated by overflows to secure a sufficient velocity of flow during those hours of the day when the flow is small. The diameter of the single conduits is from 0.75 to 1.2 metres. The syphons on the inlet side are furnished with penstocks, whereby the water can be penned up in the sewer above the syphon, and which, on being raised, produce an effective flushing velocity. None of the syphons has, however, ever shown any tendency to clog.

The syphons at Langebro, which convey the sewage of the westerly main sewer under the harbour channel, and those under the Nyhavns Kanal, are peculiar in construction as well as in the way the work has been carried out. For the traffic in the harbour it was of the greatest importance that navigation should be interfered with as little as possible, and, after consulting with the well-known waterworks contractor, N. C. Monberg, the engineer, who had also a contract for the work, it was decided to make the syphon of double (inner and outer) steel tubes which were to be built and

put together on the stocks and afterwards sailed out to the site and sunk into a channel excavated at the bottom of the harbour. After the syphon had thus been placed in position, the space between the walls of the tubes was to be filled in with a grout of sand cement, so that, when the outer tube had, in time, been more or less corroded by rust, there would be a concrete tube left. The distance-pieces between the walls of the two tubes were, with this contingency in view, made of wood, as distance-pieces of iron would, by the formation of rust later on, have a destructive effect on the sewer. The work, which was difficult and demanded careful planning — particularly in the case of the syphons at Langebro, which have a length of about 170 metres and are carried

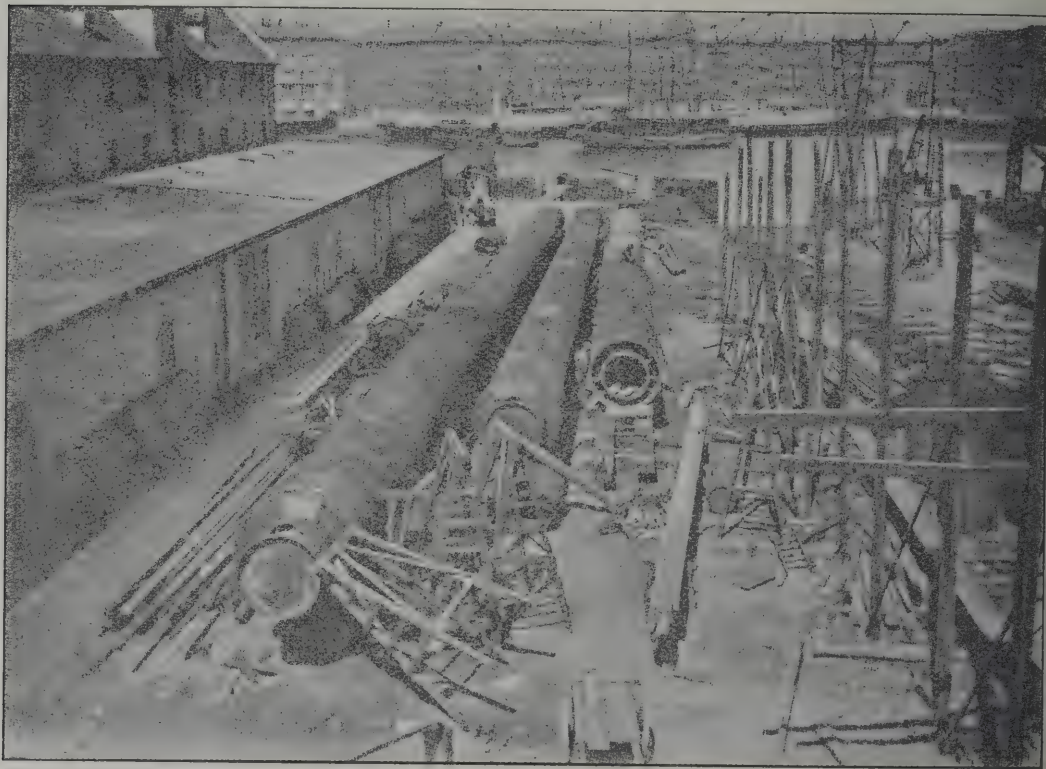


FIG. 3. — INVERTED SYPHON AT LANGEBRO : SYPHON PIPES UNDER CONSTRUCTION.

down to about 10 metres below daily water-level — was finished without any accident whatever and in a very short time, so that the navigation in the harbour suffered no interruption and there is nothing which now, after twenty-four years, indicates that the construction will not prove satisfactory.

Fig. 3 shows the syphon pipes under construction on the stocks, and Fig. 4 shows the syphon pipe on the site ready to be sunk into the channel excavated at the bottom of the harbour.

The syphon under the harbour channel to the north of Knippelsbro consists of two cast-iron pipes running through a tunnel which, at a depth of about 20 metres below daily water-level, is excavated in the solid stratum of lime which extends in a

very thick layer under the whole of Copenhagen. Access shafts to the tunnel are made by means of compressed air, while the horizontal portion of the tunnel itself under the harbour channel was excavated under constant suction by large pumps.

The syphon under Christianshavns Kanal, where the depth of water is only about four metres, was made in cofferdams as a double concrete sewer with very thick walls.

The pumping stations are, with the exception of the northerly pumping station, which has steam piston-pumps, all fitted with centrifugal pumps. At the main pumping station the motive power was originally supplied only by steam engines, but



FIG. 4. — INVERTED SYPHON AT LANGE BRO : SYPHON PIPE ON THE SITE READY TO BE SUNK.

now it is derived partly from steam engines and partly from Diesel motors. All the other pumping stations are driven by electric power and provided with automatic devices for starting and stopping.

At the present moment, the main pumping station has an installation of two pumps at 1,500 l/second, driven by a 300 h.p. Diesel motor, and one pump at 2,000 l/second, driven by a 600 h.p. steam engine.

The pumping station is, however, to be extended.

The system of intercepting sewers, pumping stations and the outfall sewer into the Sound, which was carried out between 1892 and 1900, has cost about 6,000,000 kroner and embraces, when the areas are fully utilised, housing for a population of from 700,000 to 800,000.

DRAINAGE IN THE OUTER DISTRICTS.

The drainage systems in the outer districts have to serve the scattered and incomplete suburban districts there. To keep expenses within reasonable limits, only those parts of the projected drainage works which were necessary for the moment have been carried out, and open channels, already in existence or made for the purpose, have been used where this has been possible without sanitary inconveniences being immediately caused thereby.

The main sewers are generally divided into an intercepting sewer and an auxiliary sewer, an open channel being most frequently used as auxiliary sewer. There is a much greater dilution of the sewage with rain-water in these intercepting sewers than in those in the inner city, where the rain-water is discharged into the harbour channel itself. The amount of rain-water admitted to the intercepting sewers here is usually three times the maximum dry-weather flow. This prevents bad fouling of the open channels.

I will describe the individual drainage systems. To the north there are two drainage systems : a lesser *Bryggervangen* and a greater further to the north which drains the *catchment area* of what was once two lakes — *Lersøen* and *Ullerslev Mose*. The latter district includes large areas of the neighbouring municipalities Gjentofte and Gladsaxe.

For both these drainage systems, outfall sewers into the Sound have been built, made in a similar manner to the large one for the inner city, but those employed here are carried out into only 4.5 metres of water at a distance of about 900 metres from the coast. The outfall sewers were laid in 1903 and 1905 and the places where they discharged were at that time satisfactory. Owing to the subsequent considerable expansion of the harbour towards the north, the question has arisen whether it will not be necessary in the course of time to carry the outfall sewers farther out to sea if large quantities of sewage are to be drained off these areas.

The outfall sewers carry only the daily dry-weather flow (with three dilutions during rain) out into deep water. Surplus rain-water is carried through storm-water overflows out on to the beach.

The *Bryggervangen* drainage system is so high-lying that the sewage can be drawn off through the outfall sewer without pumping. As long, however, as the quantity of water is small, this direct outflow would give so little velocity in the outfall sewer that it would soon become clogged. A large flushing tank has therefore been inserted for the incoming sewage, which is emptied periodically after it has first been agitated, thus producing an effective flushing of the outfall sewer every time the tank is emptied. The agitation, emptying and shutting off of the tank after it is emptied take place automatically. When the water in the tank rises to a certain level, a float sets a clockwork contrivance going, whereby a roller furnished with contacts is caused to revolve. The roller then connects and disconnects, as required, the electric current to the different motors which drive the agitator and open and close the flaps to the outfall sewer.

The large northern drainage system has just the same kind of flushing tank and here pumping is not necessary either, except at a little low-lying area on the coast and for a similarly low-lying area at the south end of the district. The drainage system

has two main sewers, one westerly and one southerly, lying along the two lakes previously mentioned. The scheme includes an auxiliary sewer, partly constructed as an open channel, to carry the surplus rain-water from the southern main sewer. The westerly main has no auxiliary sewer, as the Utterslev Mose, which acts as a reservoir for the surface water (used for freshening up the water in the lakes of the inner city), can at present easily receive the surplus rain-water from the drainage system. The Utterslev Mose has a rich vegetation and can therefore be relied upon to rapidly purify the somewhat polluted rain-water from the drainage system.

To the south, on Amager, there is a projected and partially carried-out drainage system for the outer districts of *Sundbyerne*. The area here is very low-lying and pumping is therefore required for the whole district. Four pumping stations are being built which will pump the dry-weather flow, with three dilutions during rain, to the common outfall sewer in the Kongedyb. The outfall sewer is made in the same way as those previously mentioned and is carried to about 600 metres from the shore into a depth of about 3.5 metres of water; later on, if necessary, it can be extended into deeper water. To provide against the outfall sewer being clogged as long as the amount of dry-weather flow is small, a flushing tank for the sewage water, like that in the northern systems, has been built and provided with automatic devices for emptying.

On the west side of Amager there is quite a small drainage system for some reclaimed harbour areas. The sewage is conveyed to a pumping station and subsequently treated in a tank (digestion tank according to the Imhoff system), whence the purified water is discharged into Kalvebodstrand. The drainage system is, however, temporary and will presumably be connected up with the outer sewer systems on Amager when the "Amager Fælle", at present utilised for military purposes, is partially given up for other purposes.

Finally, to the west on the Sealand side, there are three drainage systems.

The area round the beautiful large Vestre Kirkegaard (cemetery) includes the low-lying harbour area as in Sydhavnen (south harbour). For this system pumping has also to be resorted to, and, besides the pumping station common to the district, there are small pumping stations on "Teglholmen" and several other places in order to avoid having too deeply-lying sewers in the main system.

The two drainage systems, lying to the west, include respectively the catchment areas of what at one time were natural channels, the "Gaasebæksrende" and the "Damhusaa". The former of these two streams is now mainly replaced by a large main sewer; the latter remains as a water-course, and the intention is to use it as an auxiliary sewer for the intercepting sewer projected alongside the rivulet.

Both these drainage areas are so high-lying that pumping of the sewage is unnecessary, except in the low-lying area of the most westerly system nearest the coast, for which a pumping station has been projected. This most westerly system embraces, besides the areas in the Copenhagen municipality, very extended areas in the neighbouring municipalities, but building over these places will, it is expected, not take place in the immediate future.

The three westerly drainage systems are drained to the water area south of the harbour, called Kalvebodstrand.

The water here is shallow and current conditions not particularly favourable; consequently, it would not do to discharge large quantities of crude sewage at this spot, the more so as the suspended impurities would be carried by the southerly stream into the harbour channel. In the case of all three systems, therefore, the sewage water is treated in a tank before being discharged into the sea. At the Gaasebæksrendø system a septic tank plant of old construction is used, while at the westerly system the water is treated in a tank plant of the Imhoff type. A similar tank plant has been projected, but not yet constructed, for the outer system at the Damhusaa, and the intention is to convert the tank plant for the Gaasebæksrendø to the Imhoff type, the drying of the sludge being more easily effected by the Imhoff plant than by plants of the older type.

The areas concerned are as yet but sparsely built upon. Should these extended areas be built over in the future, the tank treatment of sewage would not be sufficient. It has not yet been settled whether a more extensive purification of the sewage by filtration or by aeration after the activated sludge method will be adopted or whether all the outfalls of the westerly systems on the Sealand side will be linked up and the sewage pumped across Amager to the Kongedyb on the east side of the island, just as has been done in the case of the inner city. A preliminary investigation has, however, shown that, in view of the heavy working expenses of sewage treatment plants, it would probably be cheaper to pump the sewage direct into the Kongedyb, as an outfall sewer could then be used conjointly with the outer districts of Sundbyerne. The direct discharge of the crude sewage into deep water offers greater advantages both from a sanitary and æsthetic point of view.

The pumping stations in the outer districts are all built as automatic, electrically-driven stations. Centrifugal pumps are used everywhere. Automatic pumps are employed even at fairly large plants.

THE QUANTITIES OF DRY-WEATHER FLOW AND STORM FLOW, DIMENSIONS, SECTIONS OF SEWERS, ETC.

Copenhagen's water consumption amounts at present to about 127 litres per day per head. The maximum consumption takes place in the forenoon, and the corresponding dry-weather flow, as might be expected, reaches its maximum a little later in the day. The dry-weather flow does not, however, vary very much between 9 a.m. and 6 p.m.

If the dry-weather flow was equal to the water consumption, the maximum dry-weather flow at noon would be 0.0022 litre per second per head. Experience, however, shows that the maximum flow, owing to the addition of drain-water and water from factories having their own water-works, is somewhat larger, *viz.*, about 0.003 litre per second per head, and this figure therefore has been made the basis of calculation for the sewers.

The number of inhabitants in the most densely populated quarters is 600 to 700 per hectare.

The annual rainfall in Copenhagen amounts to 571 millimetres. The heavy falls of rain occur during thunderstorms and are sometimes very violent, but, as a rule, do not last long. In deciding the maximum storm-water flow to be carried by the sewers, the basis for calculation adopted is a shower of ten minutes' duration with an intensity

of 40 mm. per hour, followed by a rainfall with an intensity of 10 mm. per hour, this being about in accordance with the rainfall records extended over periods of many years. A rainfall of 40 mm. per hour corresponds, in the case of areas entirely paved and built upon, to 110 litres of water per hectare per second. On this basis the maximum quantity of flow for each individual sewer is calculated, proper allowance being made for the fluctuating density of the habitations in the districts in question and, where the larger districts are concerned, also for the "lag" of run-off, that is to say, the fact that the volume of water which, during the heavy transient showers, is carried to the sewer from the nearest lying areas will already have run off before the water from the areas lying higher up will have reached the sewer in question. The maximum flow being fixed, the dimensions of the sewers are calculated on the basis of the formula : $v = 70 R^{0.6} S^{0.5}$, which expresses the relation between the velocity (v), the hydraulic mean radius (R) and the slope (S). The results obtained by this formula are approximate, but agree very well with those reached by more accurate formulæ, at least for values of v , R and S practically applied, and the appliance of the formula is easy on account of the logarithmic form.

For small sewers up to 30 cm., circular pipes are used, generally glazed earthenware, though recently concrete pipes of the best quality have also been used.

All the larger sewers are made of concrete. For ordinary sewers conveying the daily dry-weather flow as well as the maximum storm-flow, a low egg-shaped sectional form is used (see Fig. 5).

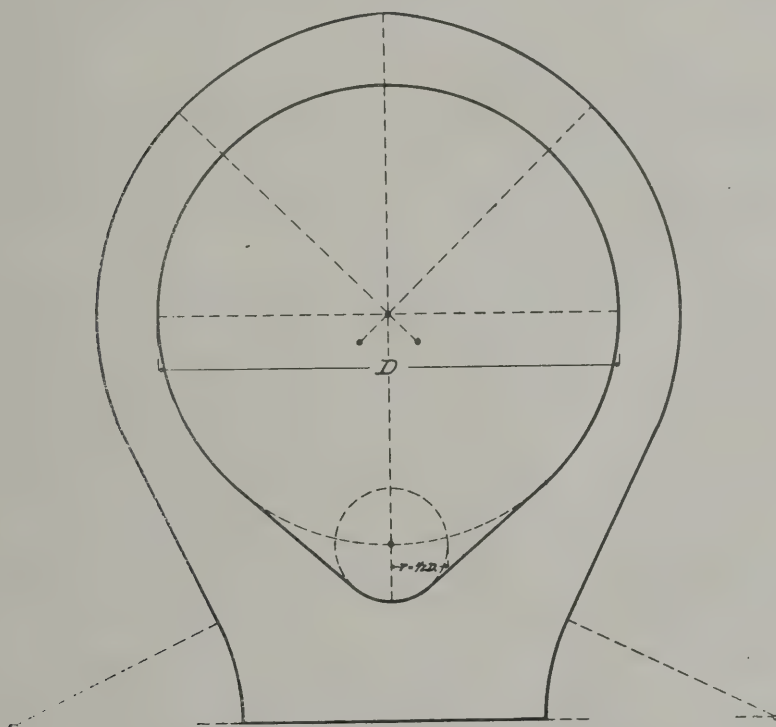


FIG. 5. — TYPICAL SECTIONAL FORM OF SEWER.

The radius at bottom equals one-eighth of the transverse diameter of the upper portion. With this shape, a good velocity can be obtained with less filling of the sewer even in the case of fairly large sewers, which is important for their self-cleansing during the dry weather period when only the dry weather flow has to be drawn off. This section form has furthermore the advantage of being lower than the prevalent egg-shaped form. As to the thickness of the concrete, the sewer pipe shown in the figure is in accord with the Danish Engineers' Association's standards for sewer pipes of sizes up to one metre and for sewers laid at a reasonable depth. Such sewers are used all over the country. For larger dimensions, where circumstances permit of it, the same inside section is used, but the sewer is so shaped that the walls have the strength as required for the depth at which the sewer is laid and the subsoil conditions prevailing at each place, etc.

The intercepting sewers are either of the same shape or a circular sectional form; the storm-water sewers are given a circular form, tunnel form or other sectional form suitable to the conditions.

The intercepting sewers are comparatively small, but the westerly main intercepting sewer in the inner city has a diameter of 1.9 metre. The storm-water sewers are frequently of considerable size; the largest at present is the "Belvederekloak", under the westerly end of the railway area, which is a twin 3.1-metre tunnel-shaped sewer.

FINANCING OF DRAINAGE SYSTEMS.

In the Act of December 14th, 1857, in force in Copenhagen, it was laid down that when the waste water or other noxious water in areas outside the ramparts could not be drained off a property without being conveyed over adjacent land, the municipal corporation might, after giving the owners of the adjacent land an opportunity of expressing their views, determine how the draining-off of the sewage was to be carried out. The municipal corporation had to decide who was to carry out the work, who was to pay for it, when it was to be finished, who was to maintain it and what compensation was to be paid. Should the work not be carried out in the specified time, it had to be executed by the municipal corporation at the expense of the party concerned.

This law has, however, never been enforced to any great extent. The main sewers have been laid and paid for by the municipality and the allotment owners have generally come to an agreement about the small local sewers. The municipality has also defrayed the cost of the intercepting sewer system in the inner city, with the pumping stations and the outfall into the Sound.

As the growth of the city demanded more and more expensive drainage systems, there was an increasing desire to saddle the allotment owners with the expenses, more particularly as the neighbouring villages had, about the beginning of the new century, been incorporated with Copenhagen.

The large powers granted by the old Act met with steady opposition, which was increased by the fact that the municipality had at the same time acquired considerable areas of land and was therefore financially interested in such drainage systems. In 1906 a new Act was passed for providing drainage systems in Copenhagen, which made it possible to carry out this object in another way. The Act, which is in the form

of an addendum to the old Act, lays down that, should the municipal board consider it desirable to establish a collective drainage, it may submit the proposal to a commission. The commission decides, on the facts submitted and after the parties interested have had an opportunity of expressing their views, whether the work is to be executed and whether in the manner proposed or in another form. It determines the contribution each individual allotment owner is to make towards the system, having regard to the utility, gain and enhancement in value likely to accrue to property concerned. It likewise determines the amount of compensation, if any, to be paid. It determines how and when the payment of these contributions is to be made, and the Act gives owners of vacant plots the right of paying the assessed contributions on such plots by instalments, in twenty years, but with the addition of interest. The municipality has to construct the system and make advances to defray the expenses, but when the work is finished it demands the contributions assessed by the commission from the private landowners to cover the amounts thus advanced.

The contributions are collected in the same way and at the same time as the taxes. The municipality takes over the working and maintenance of the system, including the pumping and treatment plants.

If the system in question is, more or less, in the interests of the public, the commission can decide that the municipality shall contribute towards it, though only with the consent of the municipal board.

A private allotment owner can, in the same way, submit a drainage proposal to the commission, but he must himself make the advances to defray the costs thereof.

The commission is a permanent institution, the chairman of which is appointed by the King. Two members are elected by Indenrigsministeriet (Home Department) and two by Kobenhavns Overret (Superior Court). An appeal against a decision of the commission is heard by a supreme commission whose decision is final.

Since the passing of the Act, a great number of drainage systems have been constructed according to these rules, and up to the present no difficulties of any kind have arisen, but I should explain that very liberal concessions have been made in permitting the payment of the more highly assessed contributions to be made by instalments extending over a number of years.

The plots have been assessed for contributions either as area contributions, determined in proportion to the size of the land with or without regard to its particular use, or as *ad valorem* contributions, determined in proportion to the value as estimated in the periodical valuations made for the assessment of the ordinary ground tax. In the case of some systems the two kinds of contributions are combined. The *ad valorem* contribution has the advantage that it can be assessed on the enhanced value attained in the course of years, and for the allotment owners this form of contribution is a relief, inasmuch as the amount assessed on new houses can be raised on loan at the same time that a building loan is raised. The *ad valorem* contribution, on the other hand, gives less security for the repayment of the advances made by the municipality, and when determining the amount of the contribution the future value of the properties in the district drained by the system can be estimated only approximately.

The municipality has, as a rule, contributed towards the public roads and the commission has assessed it with the cost of construction of the sewage treatment plants

situated on the coast, and the outfall sewers into the sea, since it has limited the allotment owners' responsibility as to drainage to the conveying of the sewage out to the coast-line, and has considered the work farther out to sea to be of so public a character that the municipality should defray the costs. •

As stated, the municipality, in accordance with the Act, takes over the working and maintenance of the completed drainage systems. To cover these expenses, and as payment for the consumption of water in flushing water-closets, the municipality has for a number of years levied an annual tax on every water-closet installed. This tax, at present 12 kroner a year, has met with no opposition from landlords and has not restricted the introduction of water-closets, for the expenses of removing nightsoil in other ways have not been appreciably less.

There are at present in Copenhagen, Frederiksberg included, 147,500 water-closets, and the annual tax of 12 kroner gives, therefore, a considerable working revenue.

THE DISPOSAL OF SEWAGE IN DENMARK OUTSIDE COPENHAGEN

BY PROFESSOR ALFRED LUTKEN,

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Regulations for the disposal of sewage in Denmark outside Copenhagen are governed by the Statute of April 19th, 1907, which is a revision of the Statute of May 28th, 1880. The statute lays down that everyone who wishes to carry off, from his premises water other than pure surface-water or pure drain-water must bring the matter before the Water Conservancy Board, whose duty it is to see that the draining takes place into a suitable watercourse or lake or the sea.

The Watercourse Boards are divided into three : the Local Watercourse Board, the Land Commission and the Supreme Land Commission.

The Local Watercourse Board consists of the watercourse commissioners, who are appointed for a certain number of years by the district or town councils ; one of them is chosen to act as chairman in all cases which only concern the local community. They are persons without any other technical education than that acquired in everyday life.

In cases which concern only one commune, the Local Watercourse Board consists of a chairman and two members. It meets whenever a request is made to the chairman, whose duty it is to see that none of the members of the Board is disqualified by too close a connection with any of the parties concerned. Should the case concern two communities, the chairmen of both boards act together with a watercourse commissioner chosen by lot by the two communes. If the case concerns three or more communes, the board consists of the respective chairmen or their substitutes should they themselves be unfitted to sit.

A Land Commission consists of two members selected by the county council from a number of land commissioners previously elected by the Ministry of Agriculture from among a number of prominent men. A lawyer acts as chairman ; he is as a rule the local judge of the district or of the neighbouring district. A Land Commission is appointed in each individual case at the request of the person who wishes to have the case taken up, and he, as applicant, is responsible for the payment of expenses.

The Land Commission can, if it considers it advisable, or if either party demands it, call in a technical adviser. The technical adviser has no vote in the Board's decision; his salary is decided by the Board and is, as a rule, added, together with the commission's other expenses, to the total cost of the undertaking, which must be paid in advance by the applicant.

If the case concerns more than one county, the Ministry of Agriculture appoints a land commission and decides from which county the chairman and the two members are to be chosen.

The Supreme Land Commission, as a rule, acts only as a court of appeal for the decision in cases of appeal against the ruling of the land commission. It is appointed by the Ministry of Agriculture, with the chief county magistrate (*Amtmand*) as chairman and four land commissioners as members, or — at the discretion of the Ministry — with three land commissioners and a specially appointed technical expert, whose fees and travelling expenses are fixed by the Ministry of Agriculture and paid by the State. If the case concerns more than one county (*Amt*) the Ministry decides which chief county magistrate (*Amtmand*) shall act as chairman and from which counties the commissioners shall be taken. The Ministry is at liberty to choose the technical expert, irrespective of his place of residence.

Should one of the parties consider that the Supreme Land Commission has either dismissed a case which it ought to have tried or decided a case which it is not competent to treat, he can appeal to the Supreme Court of Justice (*Højesteret*), which then deals with it as a privileged case — that is to say it does not wait its ordinary turn — but only decides the question of competency without giving judgment on the facts. This it does either by sending the case back for retrial or by cancelling the ruling of the Supreme Land Commission as not being within its competence and sending it to the ordinary courts of justice for decision.

All cases relating to sewage disposal are first brought before the local watercourse commissioners, who, however, can only decide the case when the parties come to an agreement or are willing to accept the ruling of the watercourse commissioners. The watercourse commissioners act as the Courts of first instance, and the details in their award can be referred to a land commission for final decision.

If the parties cannot agree to submit to the ruling of the watercourse commissioners, or if any of them do not attend the enquiry, the watercourse commissioners direct the applicant to seek the decision of a land commission, which treats the case as first instance.

The land commission endeavours to get an agreement, but, should one of the parties prove obstinate or fail to attend the enquiry, the decision takes the form of a ruling, even if the substance of the ruling, in the main, is actually decided by agreement. In this way the parties preserve the right of appeal, as all the details in the land commission's award, pronounced by the commission as first instance, can be referred to a supreme land commission, which — except in questions of competency — is the final and decisive instance.

The Statute of April 19th, 1907, has laid down this form of procedure in order to attain a rapid and cheap settlement by the watercourse commissioners of small cases where only a few parties are concerned.

In more important cases where many parties are interested, the laying of the matter before the watercourse commissioners may to a certain extent be considered as a matter of form, which, however, has its uses, as the case is thus brought to the knowledge of the parties interested, these being notified by sheriff's messenger, which procedure involves a considerable expense. When, however, this has taken place, the Land

Commission can adopt a more summary and cheaper form of announcement — proclamation at parish meetings and publication in the State or local newspapers.

The main purpose of the Statute of April 19th, 1907, as differing from that of May 29th, 1880, is, besides defining sewage and the prescribed form of procedure, to separate private and public cases and to give greater facilities for carrying out a public sewerage and sewage disposal work.

Any private person may make use of the regulations of the statute for his own benefit, and he is allowed to carry a drain or sewer across another person's property on paying suitable compensation for right of way, and the owner of the land in question has the right to use the drain or sewer if he shares the expense, but he cannot be forced to do so.

On the other hand, a town or district council can — if it considers that a sewage or disposal scheme is of such public importance that it will itself carry it out and pay the expenses in advance — force all the landowners whom the Watercourse Conservancy Board considers as benefiting either at once or in the future by the sewage scheme to share in the costs as apportioned by the Watercourse Conservancy Board or the Land Commissioners. In such instances the town or district council, or, if the case concerns several communities, the councils in question, convene meetings of the watercourse commissioners and Land Commission.

The applicant must place before the Commission a detailed plan of the work proposed, stating which parts it is desirable to carry out at once and which can be postponed to a future date. At the same time a proposal must be made for apportioning the expenses among the landowners concerned and for the method of payment of the landowners' contribution. The council has a right to cash payment on completion of the work or it can grant the landowners the right to pay by instalments over a number of years at a suitable fixed rate of interest.

The Land Commission has the right to impose on the community defrayment of part of the expenses, in accordance with the Commission's estimate, thus lightening the burden of the landowners ; it can also decide whether the community shall receive any indemnification for future work and maintenance. Finally, the town or district council can, without reference to the Conservancy Board, undertake sewage works at its own expense and decide the amount of rates to be paid for the use of its own private sanitary undertakings — for instance, the rate for installation and use of water-closets.

As easy terms of payment are of equal importance to the landowners, terms of payment of contributions by the community and of working and maintenance expenses are decided as a rule by negotiation, even if a formal decision has been taken which preserves intact the right of appeal for both the community and the landowners.

Technically speaking, the principal question to be decided by negotiations concerning public sewage works, when the areas embraced include considerable tracts of land yet not built upon, is the extent to which future building operations are to be considered and how far endeavours are to be made to purify the sewage in order to avoid hygienic or æsthetic trouble.

Experience, in most cases, proves that if sewers are made just large enough to satisfy the momentary need, and subsequently have to be rebuilt, the saving, compared with the costs of laying the sewers in the first place of the size eventually necessary, is greater, with the accruing interest, than the expense of reconstruction. Sewers may, however, be made of sufficient capacity at once in cases where the ground not built upon represents more than 50 to 65 per cent of the entire area drained and when it lies between sites already built upon ; but in these cases the areas not built upon must, at any rate, pay a proper share of the loss of interest accruing when the main contribution from property is first paid at the moment when that property is built upon.

If the areas not built upon represent a greater part of the area and lie tolerably close together, the common sewers may be constructed of half capacity in order to reduce as far as possible the preliminary contributions from the properties unbuilt upon as long as they are for the moment only used for agricultural or horticultural purposes. This means that the town or district council must be willing to advance the principal contribution for the areas not built upon and must run the risk of the building taking longer than anticipated and causing a loss of interest. This risk must be taken into consideration by the Land Commission in fixing the amount of contribution from the community.

If the areas not built upon are subject to building speculation, the willingness of the community to advance money for their sewage will, in all probability, be greatly diminished.

As far as the question of the purification of sewage is concerned, the statute only directs that the sewage must be discharged into a recipient suitable to receive it. In towns on the coast, where the interests of bathers have to be taken into consideration, the impurified sewage is, as far as possible, carried out to sufficiently deep water, as is the case in several seaside towns on the Sound, where it is pumped automatically through a pressure outfall at a sufficient velocity to keep the outfall clean.

In the towns in East Jutland which lie at the heads of deep fjords, where there is no current, the solid matter in the sewage is separated in a septic or Imhoff tank and the sewage afterwards discharged on the coast ; most of these towns have scattered suburbs along the coast, which discharge their untreated sewage on the foreshore. This results in a slow destruction of the shallow-water fauna, as the ebb and flow is too slight to ensure a sufficient renewal of the salt water.

In inland districts, where, as a rule, the natural watercourses are used as recipients of the sewage, owing to the slight fall and flow, especially in summer, of the watercourses, considerable care is required in purifying the sewage of small towns. The sewage passes through a septic tank or Imhoff tank, from which it is led to the watercourse without oxidation if the quantity of sewage is small and the stream runs for a considerable distance through unpopulated areas, so that it can be rendered innocuous by the action of light and air.

It is sometimes necessary to compensate the riparian owners for the spoiling of the water in the stream as drinking water for cattle, and, if the cleaning-out of the stream is increased disproportionately, the statute authorises that the stream shall be considered as a part of the sewage system and that this expense shall be defrayed by the community. In other cases the cleansing of the watercourse rests with the riparian owners.

In the great majority of cases the Land Commission's award contains a clause stipulating that the arrangements made are only temporary, since considerable

increase in building will entail the necessity for complete treatment of the sewage, to which all the landowners concerned are forced to contribute.

At Odense the sewage is purified first in septic tanks, secondly in trickling filters, because the quantity of sewage is comparatively large, whilst its recipient — the Odense River — has only a slight fall and flow. Hillerød and Lyngby also have oxidising filters.

At Randers the sewage is discharged from septic tanks without filtration into the River Gudenaa, which has a considerable volume of water and rapid current, so that it may be considered as a self-cleanser.

Complete purification of the sewage by the activated sludge process has, at present, been adopted only by the Søllerød District Council. The sewage from the districts of Søllerød and New Holte is carried to the Furesø Lake through the smaller Søllerød Lake, as it is of the utmost importance to preserve these lakes from pollution.

Sewage disposal by discharge into underground water-carrying strata has been practised in a few places in the neighbourhood of Copenhagen, but it has proved necessary, out of consideration for Copenhagen's water supply, to prohibit this by special statute. A statute dealing with the use and protection of the underground water supplies for the whole country is under preparation.

Even if sewage disposal in the Danish rural districts cannot be said to be perfect from a sanitary point of view, we are justified in saying that the carrying-out of the statutes now in force by the Watercourse Conservancy Board has, owing to the sound common sense of the Board, removed the worst dangers and, on the whole, produced satisfactory conditions.

THE ALCOHOL QUESTION IN DENMARK

BY HARALD WESTERGAARD,

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As in so many other countries, the general view in Denmark concerning alcoholic liquors has undergone many changes. From olden times, when inebriation was not regarded with disgust but rather as the natural conclusion of a happy gathering, people's minds have grown to adopt the modern view, which judges the effect of strong drink from the point of view of hygiene or ethics and condemns any kind of untrained drinking of alcohol — indeed, often will not tolerate any consumption of it at all.

There is much interesting evidence of the old-time view of alcohol liquor held by our forefathers. A famous Danish noble, Eske Brock, who died in 1625, kept a very careful diary, in which he marked a recumbent cross every time he had been intoxicated; when the spree was out of the ordinary, two or three crosses were drawn. People were not, apparently, ignorant of the fact that excess of drinking was injurious to the health. In his frank funeral oration over the Danish King, Frederik II, who died in 1588 at a comparatively early age, the famous historian A. S. Vedel speaks of the "harmful drink", without which "His Majesty would presumably have lived for many a long day". One had to be very drunk to deserve such an oration.

No doubt it was mainly the upper classes who permitted themselves the luxury of frequently becoming intoxicated. Most people have presumably had to be content with fewer festivities. When the opportunity did arise, however, they certainly made good use of it. A French writer, Pierre d'Avity, describes the Jutland peasantry at the beginning of the seventeenth century. They were strong and healthy people who "eat and drink much, digest well and therefore live long".

But if one is tempted to regard the whole population of those times as being alcoholised, one must remember the poor conditions under which they lived and which prevented the common man from yielding to possible temptations to drink to excess.

It may be that spirits contributed to a more extensive alcoholism. The drink of the ordinary population in former times was beer, with mead for festive occasions; they could seldom afford wine. In the sixteenth century people began to produce spirits. At first spirits were mostly regarded as a medicine — "life water" — *aqua vitæ*, which was the cure for all ills "that a man can have inwardly". Gradually, however, the population learned to appreciate spirits as a pleasant drink, and the distilling of spirits, partly as a trade and partly for private use, by means of more or less primitive distilling apparatus, became very widespread. This domestic industry was opposed to the fiscal interests of the State, and the Government fought long against it in vain until, in 1843, very energetic measures were taken and, at one blow, the business was eradicated, many thousand distilleries being given up by the population.

With the development of distilleries as a business, the population also had access to cheap spirits. Apart from this, beer of steadily improving quality was being brewed. The production of beer made marked progress from the middle of last century.

It was consistent with the general feeling in the country that these commodities should be subjected to very low taxation. Beer was indeed exempt from any form of taxation in the forty years from 1851 to 1891, and at the same time spirits were taxed at a comparatively low rate. It was a generally accepted dogma that no obstacle ought to be placed in the way of "the poor man's gin" ("snaps").

In 1851 spirits were taxed in the form of a tax upon stills, which was paid at every distilling. By the Act of 1887 this was replaced by a charge on the finished product. The charge amounted to 18-19 øre for every litre of pure alcohol. In 1891 beer with more than $2\frac{1}{4}$ per cent weight-content alcohol was likewise taxed with a charge on the finished product. This charge was fixed in 1908 at about $6\frac{1}{2}$ øre per litre, or about $2\frac{1}{4}$ øre per half-bottle. These rates did not form any particular hindrance to the consumption of alcohol. Both beer and spirits continued to be cheap drinks, and at the same time it was extremely easy to obtain them; moreover, the regulations as to the serving and sale of spirituous liquors were rather lax and the trade was almost completely unrestricted, so that the number of retailing places ("on-licenses") was disproportionately high. In 1880 there was on the average one "on-license" to every 450 inhabitants and one "off-license" to every 340.

In comparison, our neighbours Norway and Sweden went very much more energetically to work, and the consumption per head in these countries was very much lower than in Denmark. There were many drawbacks to this great consumption of alcohol in Denmark; alcoholism showed its effects in the mortality rate and in social matters, separations, divorces, etc. It is, of course, difficult to draw conclusions, as matters of this kind are as a rule difficult to demonstrate by statistics. I can, however, quote one statistical investigation which testifies to the extent of alcoholism at the beginning of this century, though some authorities have maintained that it gives a somewhat too pessimistic picture of the state of things. A Commission, appointed by the Home Office, received from Danish doctors particulars regarding the causes of death of 4,390 men over the age of 15 years and 4,280 women who died in 1905; one question put was whether excessive use of spirits was the main cause or a contributory cause of death. The results showed that 23 per cent of the deaths among the men could be described as connected with drink. Between the ages of 35 and 65 this was the case with one-third of the deaths. Matters were specially bad in the capital; at the age of 50 about half the deaths were connected with drink. This does not, of course, mean that half the living population at that age were drunkards. As regards the women, alcoholism was less prominent; three per cent of the deaths were connected with intemperance, and at the age of 50 about five to six per cent.

As evidence of the effects of this great amount of mortality from alcohol, I may add that if all these deaths could have been avoided, the mean lifetime of a twenty-year-old man would have been prolonged by four years.

A variety of circumstances now contributed to a reduction of this great consumption of alcohol. All over the country great agitation arose against spirituous liquors, and powerful temperance organisations were formed which, especially in the rural districts, grew extensively. At the end of the great war the membership of these

organisations was almost 200,000. There were districts in the country where the temperance question entirely dominated public opinion. In the towns this, naturally, could not be the case, but there too, a turn of the tide was observable in public opinion, as, for example, in the drinking habits of the workmen.

Apart from this voluntary movement, demands were made upon the Treasury. Funds required for social legislation had to be procured, and at the same time the money had to be found for our national defence. Sources of income to the Treasury had therefore to be sought, and alcoholic liquors naturally attracted attention. In the year 1912, an excise duty of 60 øre was placed upon pure alcohol, but with a rebate on denaturalised spirit and exports. This was, however, a very moderate taxation — only about 20 øre for a whole bottle (about three-quarters of a litre), and spirits were still a very cheap drink. This increase doubled the revenue derived by the Treasury from the excise duty on spirits; from rather more than 3,000,000 kroner in 1901 the sum of 6,500,000 kroner was obtained in 1913.

Beer had also to give its contribution. An Act of 1912 increased the tax by about 50 per cent. It was now 9.50 kroner per hectolitre (about 3 1/2 øre per half bottle), and, whilst the income of the Treasury was formerly rather over six million kroner, it now rose to more than eight millions. On the other hand, the Customs Act gave Danish beer a certain amount of protection.

Beer was still, however, a comparatively cheap drink and there was no real hindrance to consumption, which was considerable.

Then came the war, which brought a new phase in developments. In 1917, the unrestricted submarine warfare placed the country in a very difficult position. Denmark had, for the most part, to look to her own production of the necessities of life, and economy in grain was essential. A temporary prohibition of the sale and serving of spirituous liquors was therefore decreed, and a great restriction of production was enforced. The distilleries were only allowed to produce one-third of their former output, which was supposed to go towards denaturalising and technical purposes and, when the temporary prohibition against sale and serving was withdrawn, it was replaced by severe restrictions. The production of beer was also reduced, in agreement with the brewers.

Naturally, on this occasion, too, the Treasury was not forgotten. In 1917, the taxation of Danish wine was imposed for the first time. The beer tax was increased, so that beer with more than 2 1/2 per cent alcohol was now taxed 18 kroner per hectolitre (6 øre per half bottle), and some kinds of beer which formerly had been exempt, *i.e.*, the stored, "improved" sorts, were charged 5.70 kroner per hectolitre, or about 2 øre for a half bottle.

Spirits were specially hard hit. By an Act of March 17th, 1917, a supplementary tax was placed on all stocks of Danish or foreign spirits, equal to the retail price charged to the public. A similar supplementary tax was collected upon all spirits imported from abroad. Towards the end of the year these regulations were made more rigorous, and, on December 22nd, 1919, a law was passed placing a uniform tax upon all spirits, both Danish and foreign, of 20 kroner per litre of pure alcohol, with exemption for denaturalised spirit and the possibility of a considerable reduction in the case of medicine, spirit for technical use, etc. All in all, a whole bottle of Danish spirits of 45 per cent bore a tax of about 6.50 kroner — a very heavy tax in comparison with the light taxation of the nineteenth century. In 1922 the tax was reduced to 15 kroner.

The grip which the State acquired upon the production of spirits has since been somewhat loosened. In 1917, the production of the distilleries was halved, and in the following year it was again reduced to less than the half the amount of 1917. Subsequently, it rose a little, but even in 1922 it was only 35 per cent of the 1916 production, and as about the same quantity went for denaturalising, the production of drinking spirit was only 15 per cent of the amount in 1916. A comparison of all the consumption of spirits according to alcoholic content and of wine and beer shows that, while an average of 6.7 litres per head were consumed annually before the unrestricted submarine war commenced, the consumption had in 1917 gone down to 3.4 and in 1918 to 1.7. In the following period of four years, consumption reached a somewhat higher level, with about the same average quantity consumed per individual. The annual average is now 2.7 litres per head — still a very considerable diminution of the quantity consumed before the war.

In comparison, it may be stated that the consumption of pure alcohol per head in Sweden before the war was only two-thirds of the Danish, whilst in 1922 it was 2.8 litres per head, as against 2.6 in Denmark.

Evidence of what this reduction in the consumption of spirits has meant is to be found in the statistics of the number of deaths in the Danish town population from chronic alcoholism, delirium tremens, or sudden death owing to drink. In the years before the war there were on the average 190 such deaths per year, or 13 per thousand of all deaths. In 1914-16, the average had sunk to 139, or 9 per thousand, and in 1917-21 down to 37, or only 2 per thousand. The fall due to the submarine war in 1917 was very sudden.

In Sweden and Norway, a heavy taxation of spirits began much earlier than in Denmark. At the same time the sales legislation was a powerful element in limiting alcoholism. In Norway, a sales law was passed in 1845, which gave the town councils the right to determine the number of retail places for spirits, and in the rural districts gave the parish councils the right to determine who should have the right to deal in spirits. Later on the limitation of the unrestricted serving of beer and wine began.

The result was that the serving and sale of all kinds of liquors has been ousted from practically all the rural townships, and only in a few large towns is there a considerable number of on- and off-licenses. An Act of 1871 made possible the establishment of societies on the Swedish model, with the sole right of serving and selling spirits, and their profits go towards purposes of public utility as well as to the State and municipality. From this starting-point legislation was continued in the subsequent period. Not only is the right of serving restricted in this manner but also serving on Sundays and holidays and the days before these. The activities of these societies was, however, affected by an Act of 1894, which laid down that the establishment or continuation of these societies should be determined by the population itself, and thus in several towns the societies disappeared and with them the serving of alcoholic drinks.

The great war brought stringent measures with it. In 1916 a general prohibition was proclaimed against the sale and serving of spirits; in 1917 a similar prohibition was made regarding wine with a certain percentage of alcohol, and for a time the sale of strong beer was also prohibited. The struggle of the later years has been on this point, and it is uncertain how it will end. Prohibition produced smuggling, which has been

extraordinarily difficult to deal with, owing to Norway's very extensive coast-line. This has given wind to the sails of the opponents of prohibition. It is, however, almost certain that the great restriction in the access to strong drink procured by the endeavours of the last few generations will be retained.

In Sweden, too, great obstacles have been put in the way of obtaining strong drink. That country has the honour of starting the famous Gothenburg system in 1865, which has also been used in Norway. The idea of the system is to hand over the trading and serving rights in a town to societies, whose profits benefit the community at large and who thus have no interest in a large turnover. This system aimed at the sale and serving of spirits, but measures are also taken against wine and beer : the serving of these liquors is under the control of the municipalities.

The Gothenburg system has without doubt been very useful in reducing drunkenness in Sweden. A good deal of criticism arose, especially in the form of a powerful agitation by a physician, *Dr. Bratt*, who demanded that the system be altered in such a way that anyone wanting spirituous liquor should obtain a purchase-certificate and give a personally signed order-form ; the right to purchase was to be taken from any person who proved unworthy. The Act of June 14th, 1917, which was passed after a long struggle, supported Dr. Bratt's idea. The principle of the law was, on the one side, municipal self-government and, on the other, control of consumption. At that time experiments had been made for several years with control, especially in Stockholm and Gothenburg, and a number of towns followed. The system has met with great opposition from various quarters. The total abstainers were not satisfied and demanded complete prohibition, but a referendum on this point in 1922 did not give them the victory. As far as Sweden is concerned, we must await the course of events, and it is impossible at the present time to make a definite forecast.

Whilst Sweden and Norway have in one important respect been in advance of Denmark in the struggle against strong drink, in our country we have not been behind-hand in limiting opportunities of obtaining alcohol. We have tried to restrict the serving of spirituous liquor on Sundays and holy days and to give the municipalities local option, so that the corporation decides whether permission is to be given for the sale or serving of strong drinks, or the question is settled by local ballot. Year after year went by without any change in the legislation. The Home Office, however, took administrative steps, which were of no slight importance. A parish council had in 1907 allowed its attitude on the question of an inn license to be decided by ballot. The Home Office, on this example, introduced a system laying down in the beginning of 1910 that a license might be refused when a certain number of eligible voters opposed its grant. Several appeals to the electors have since been made all over the country in regard to inn licenses.

In 1912, a law was finally passed as to inns and taverns by which the municipal council, subject to the approval of the Home Office, decides how many licenses for serving shall be issued, but in any event not more than one for every 350 inhabitants. In the country the parish council proposes the licenses, and the County Council may refuse them.

The intention was that this law should be revised after five years, but nothing was done till an act was passed in March 1924 partly settling the question.

In the proposals which had been made, the main attention had been given to local ballots, whereas not much attention had been paid to the importance of restricting the hours of serving, especially on Sundays and holy days and the days before these.

In Denmark, there has been a keen struggle with smugglers, who are tempted by the high duties, and for this reason alone it will be difficult to wholly eradicate alcoholism as long as there are countries where spirituous liquors can be bought at comparatively low prices. Apart from this, it must be acknowledged that it will be very difficult, even with the imposition of very high taxes, to get alcoholism to disappear. There will always be a number of people in a country who will try to procure drink at any price. Therefore, in the tables of suicides, poor-law statistics, statistics of divorces, etc., one can still read evidence of the degenerating influence of strong drink. At present there does not seem to be any inclination among the people to demand complete prohibition, and the friends of temperance must turn more in the direction of local ballots, through which, it is to be hoped, large parts of the country will gradually become "dry". Even now a good deal has been done in this respect; about one-fifth of the parishes in the country have neither "off-licenses" nor "on-licenses"; not quite half have "on-licenses".

Things look less promising in the towns. In the rural districts in 1920 there was only one "on-license" for every 2,000 people and one "off-license" for every 400, whereas, in the towns, there was one "off-license" for every 150 and one "on-license" in the capital for every 600, and in the provincial towns one for every 400. But even these figures show progress in comparison with the conditions a generation ago.

The new Act will probably support efforts to diminish alcoholism. It does not essentially limit the sale of spirits, whereas the number of on-licenses in Copenhagen and the provincial towns is limited to one for every 450 inhabitants, and no licenses for a lifetime are issued. As a rule there will be no serving of spirits between 12 p.m. and 8 a.m. In the rural districts local ballots will take place under certain conditions.

PHYSICAL TRAINING IN DENMARK

BY K. A. KNUDSEN,

Chief Inspector of Physical Education.

When, at the close of the eighteenth century, the educationist Gutsuths sought to revive the gymnastics of the ancients in German schools, he strongly emphasised their hygienic as well as their educational value. His system of school gymnastics did not, however, make much headway in Germany because it was eclipsed by the "turn" of the "Turnvater" Jahn. It travelled northward, however, and came first to Denmark, where, by the Education Act of 1814, it was made compulsory in all schools, though only for boys.

From Denmark it spread to Sweden, the Swede P. H. Ling having become acquainted with the Gutsuths system in Copenhagen. On the basis of this, he evolved his own ingenious system, comprising not only educational gymnastics for schools but motorpathy, or the passive movement system for patients, which shows more clearly than anything how his work was rooted in hygienics.

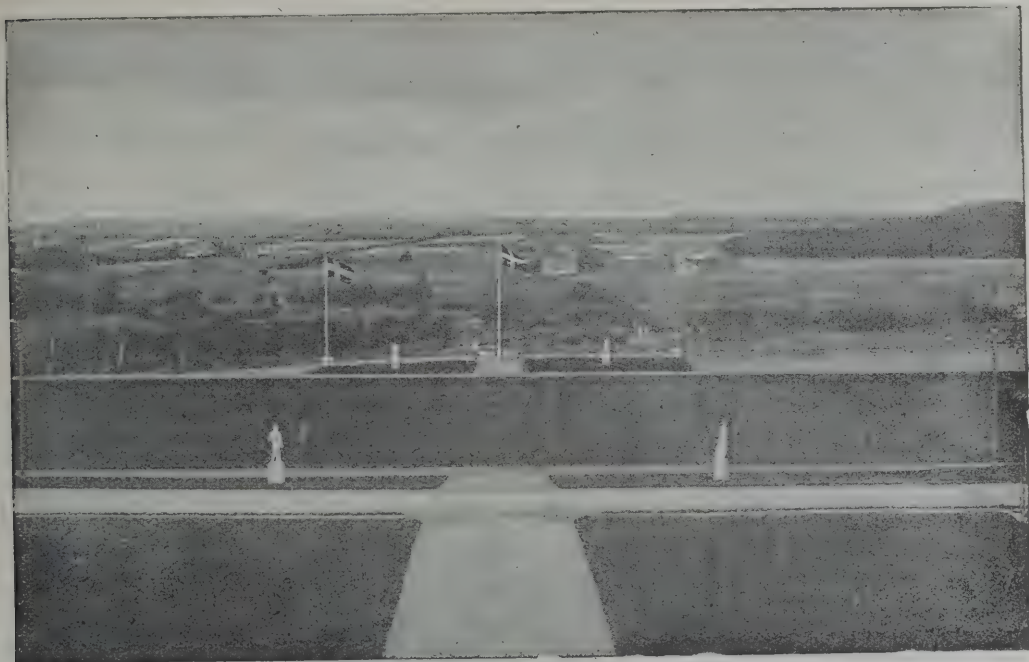
For more than a lifetime, Ling's system had an unobtrusive existence in Sweden. Then it began to travel southwards. In 1884 it came to Denmark, and since then it has spread to most European countries, especially those of the west, and to America.

In Denmark, Ling's gymnastics encountered the high-school movement, a movement for the diffusion of knowledge, especially among the rural population. The popular high schools and the closely allied industrial and agricultural schools are situated in the country and are attended chiefly by young peasants. They are boarding-schools, in the five winter months for young men, in the three summer months for young girls. From the very first, gymnastics were included in the curriculum, first Gutsuths' system, then after 1884 that of Ling, which superseded Gutsuths' in the course of two or three years. The young people who had acquired a taste for gymnastics at the high schools continued to practise them in the so-called rifle and gymnastic associations.

Through these associations, gymnastics became so extensively practised among the young people of the villages that Denmark has become noted far and wide for its peasant gymnastics. The mental culture acquired at the high schools by the young men and women among our agricultural labourers has given them also a taste for physical culture. One would think that no one who had spent all day in agricultural labour would feel inclined to take gymnastic lessons in the evening. But that is not the case with a great portion of the young people among the rural population. After one-sided physical exertion, which easily deforms the body and sets somewhat of a slave-mark on it, the young people feel a sense of physical well-being when once or

twice a week they get their backs straightened and their joints made supple by all-round training which brings harmonious development. The slow and heavy movements of their work are superseded by exercises giving ease, freedom and beauty to the body. When an English officer once saw a hundred young peasants having their daily gymnastic lesson, he exclaimed : " They are like young gentlemen ! "

The agricultural population of Denmark totals about one million. Of these, about 35,000 young people between 16 and 25 years go in for gymnastics, about 20,000 young men and about 15,000 young girls in 831 associations with over 1,000 male and about 500 female teachers. The exercises take place in the so-called exercise-houses, or meeting-houses, which are also used for lecturing.



STADIUM AT THE OLLERUP GYMNASTIC COLLEGE.

If we enquire what sort of people are to be found in the villages to teach gymnastics in these associations, we again meet with a feature that is peculiar to Denmark. The teachers are themselves young peasants chosen by their associates according to the rule *primus inter pares*. They are trained at monthly courses held every autumn. The training is gratis. The State defrays the expenses of these courses. It is an honour for a young man to be chosen to take part in such a course. The choice may as easily fall on a poor farm-hand as a wealthy farmer's son. The determining factor is whether he has gifts as a leader and a teacher.

At these courses about 50 lessons are given in the elements of anatomy and physiology. The teacher must have some knowledge of the human body, which he is called

upon to train and influence. As thousands have attended these courses, in the course of years a feeling for hygiene has by them been spread among the rural population, for instance as regards bathing, and baths have been attached to the more recently built gymnasia.

It is regarded as a post of honour to teach one's comrades gymnastics, hence the work is as a rule unremunerated.

A young man or woman does not, as a rule, teach gymnastics for many years. When they get married or adopt some independent occupation, they cease, but they retain their interest in physical training. Often they belong to the class and, when they attain maturity, obtain leading positions in various associations, on parish councils,



A GYMNASIAC FESTIVAL IN THE COUNTRY IN DENMARK.

schoolboards, prefectural councils, health commissions, epidemic commissions, etc., and they have then the opportunity of pleading the cause of gymnastics. Indeed, in the Danish Rigsdag a great number of the members obtained their first practice and experience as leaders in the gymnasium, and it is due to these members among others that the Rigsdag has always generously voted grants for the promotion of gymnastics.

Of recent years many of these male and female gymnastic teachers take their training course during their five- or three-months stay at the high school, devoting about 15 hours a week to it out of their spare time. A characteristic testimony to the soundness and force of this peasant movement for physical culture is a school

founded for the sole purpose of training gymnastic teachers for the country. It was established in 1920 amid the beautiful scenery of South Funen at the village of Ollerup by a young farmer, Niels Bukh, who possesses unusual gifts as a teacher and the rare intuition of genius for finding new ways and improved means of physical training. The school has room for a hundred pupils and is always full. It has a stadium worthy of any large city for size and beauty, decorated as it is with casts from Greek sculptures.

It is by no means to physical exercises alone that the pupils of this school devote themselves. It is called the High School of Gymnastics, and it lives up to its name. The high school tuition proper in intellectual subjects is by no means set aside. In this, as in the other high schools, intellectual and physical education go hand in hand. The healthy view that physical exercise is a link in the chain of development and a



THE COLLEGE OF GYMNASTICS IN OLLERUP.

servant of intellectual education has kept peasant gymnastics free from those disfiguring excrescences so often found in other sports, such as record-hunting, prize-giving, "starring" of a single person to the neglect of the majority, etc.

Niels Bukh's name and work ("Primitive Gymnastics") have lately become known outside Denmark, since he has given gymnastic displays in several countries by special request.

For several years peasant gymnastics were not much noticed outside those circles in the country where they belonged. But little by little they attracted attention first among educationists and later in military circles. This resulted in a thorough reform of Danish school gymnastics and the physical training in the Army and Navy — a reform which came into operation about the beginning of the century.

Among the urban population, too, there is a growing interest in physical exercise, especially in those forms that are practised in the open air, such as games and free exercises (pedestrianism, running, jumping, throwing). Football is the game that has by far the greatest number of devotees. In all towns there are good sports-grounds laid out partly or entirely at the public expense. Thus, Copenhagen has a sports-ground covering about 9 hectares of land in addition to several smaller playing-fields throughout

the town. In the winter, gymnastics are very largely practised in the towns, where the excellent gymnasia of the elementary public schools are open to adults. In contrast to the country where Ling's system was chosen, the towns long kept to the old form of gymnastics which comes nearer to the German "turn". But recently Ling's system and especially Niels Bukh's form of it, has developed widely in the towns too. The urban gymnasts are united in "Dansk Gymnastik Forbund", a combination comprising the whole of Denmark and counting about 13,500 members in 40 associations.

The hygienically valuable form of gymnastics called "home gymnastics", consisting of 10 or 15 minutes' drill night and morning, has become very popular in Denmark, especially since I. P. Muller called his countrymen's attention to it in his book "My System", and it has been of much benefit to people with sedentary occupations.

School gymnastics in Denmark were formerly for a period of about a hundred years in the hands of specially trained male or female gymnastic teachers. They taught gymnastics only and had no further educational training, being thus entirely out of touch with the rest of the school work. The result of this was that there was very little understanding of or interest in physical training among educationists in general; it had no organic connection with the rest of the curriculum.

This unfortunate state of things, which was a great drag on physical education, was entirely changed by the gymnastic reform at the beginning of the century. By the Education Act of 1899, the instruction in gymnastics was put into the hands of the ordinary teaching staff of the school. The State Gymnastic Institute was founded in 1898 for the purpose of qualifying male and female teachers who possessed the ordinary teacher's training to take over the teaching of gymnastics according to the new system and the new principles regulating the position of this subject in the curriculum. It was not at all the intention that the teachers thus trained by means of a year's course should teach gymnastics only at the schools — that would have been the old system over again in another way. With the new system they give only one or two gymnastic lessons a day; the rest of the time they teach the ordinary school subjects.

The hopes entertained of this new arrangement were not disappointed during the next twenty years. The old system will hardly be introduced in Denmark again and for the following reasons:

It is an advantage to the *teacher* that he can give intellectual as well as physical instruction. It is exhausting and intellectually deadening to teach gymnastics for five or six hours every day year by year, but it will break the monotony of mental work if the teacher can spend a few hours daily in the gymnasium or the playing-fields. An entirely different set of abilities and powers come into play there, and he returns refreshed to the class-room. His knowledge of the pupils is increased too, for their characters are seen under other aspects during games and gymnastics than during study.

Further, it is the best arrangement for the *school*. The old gulf between intellectual and physical education will not be bridged over, and there will be no unity in school-work until the school realises the importance of the physical development of the child and that moulding of the mind and character which may be attained through physical exercise. The school will not arrive at an understanding of this until its own teachers take up the work of physical training and gain the insight which it gives.

When such teachers, who have given instruction in physical exercises for perhaps 15 or 20 years, besides teaching other subjects, are promoted to leading positions in the school, they carry with them an understanding of and insight into physical training which will make them advocate it, and is a guarantee that it will not be neglected.

Further, this arrangement has proved beneficial to *physical training* itself. The subject has been put into the hands of teachers who have an all-round knowledge of teaching. It has therefore undergone a thorough revision from an educational point of view, being specially adapted for school use, and undesirable elements are discarded, so that there is now a special system for little children and for girls, whereas formerly the same system was employed for children and adults, for men and women. The subject now forms an organic part of the curriculum and has gained in esteem among the children and their parents, *i.e.* the community, with the result that many good and well-supplied gymnasia have been built.

It is not only in the public elementary schools that the old system of the "gymnastic teacher" has been abolished. The same has happened or is happening in the secondary schools. Teachers for these schools are trained at the university by a five- or six-years course of study of three optional subjects. In 1909 gymnastics was introduced as a subject at the university and may be chosen as one of the subjects for the teachers' examination. There is now a professor of anatomy, physiology, and the theory of gymnastics for students. Their training in the practical side of the subject — gymnastics, games, swimming, etc. — and in teaching takes place at the State Gymnastic Institute. The fact that physical exercises have come under scientific treatment is a great step forward which will in future, it is to be hoped, develop still further. Denmark is the first country in which the scientific world has opened its doors to studies that aim at the physical development of children at school. It seems strange indeed that such a step has not been taken long ago and at many universities. Is the development of the body to its normal capacity, to radiant health, to the full exertion of its powers during a long life's work less important than the scientific study of the pathological conditions of the body? Anyone who has to do with physical training knows how many unanswered questions he has to face, and to whom should he go for the answer if not to the hygienist or the physiologist?

Gymnastics are chiefly practised at the schools during the winter. In the summer the children go to the playing-fields for games. This arrangement, which is comparatively recent, quickly met with the approval not only of the children and the teachers but also of the authorities. In the course of a few years all schools in the towns got their own or a hired sports-ground.

From the beginning of June to September, all schools that are not more than 5 km. distant from available water must let the children bathe and swim during all hours set aside for gymnastics. In larger seaport towns, especially in Copenhagen, the bathing establishments are kept open for the children during the summer holidays and teachers of swimming are provided for them. In the winter a warm soap-bath is provided for the pupils in the elementary public schools in the towns once a week or very often twice a week.

At the final examinations of the secondary schools, *viz.* the examination passed at the age of 16 and matriculation at the age of 18, marks are given for physical exercises

which count in the final result like the marks for other subjects. These marks are given not only for efficiency but just as much for general application evinced by the pupil during the ordinary lessons.

The Ministry of Education has the control of the instruction in physical exercises through a gymnastic inspector who is also advisor to the Ministry on questions concerning physical training. He is assisted by six female and seventeen male inspectors, each of whom has his or her field of work. The supervision is in the first place instructive.

It may be said, it is to be hoped, that in Denmark the work for the physical development of the young and their education through physical exercises is carried on on sound principles; there is, on the other hand, no doubt that we are still only at the beginning of the work. A long time will elapse before the hygienist and the physiologist have built up a sufficiently firm substructure for it, before their results are carried into operation and before the intellectual subjects which now take up about eleven-twelfths of the school hours accord a little more time to physical training.

THE RAT CAMPAIGN IN DENMARK

BY DR. MAX CHRISTIANSEN.

Before we consider the development of the rat campaign and its present results in Denmark, I will mention the methods which are considered to be of value.

The bonus system. A small bonus of money is given for every rat killed, with the object of getting as many people as possible to destroy them.

Laying down substances fatal to rats. The poison is laid simultaneously over large areas. If this is not done the only result is to drive the rats from one place to another.

The third system might be called the *preventive system*. Its object is to deprive the rats of their means of existence by keeping all kinds of eatable refuse in inaccessible places, and, by making rat-proof buildings, to keep them from their runs and breeding-places.

The destruction of rats was first taken up privately by an engineer named Zuschlag about the year 1900. He succeeded in getting a committee appointed to fight the rat plague. Later on the Society for the Extermination of Rats took up the work.

The bonus system was used. The Society procured voluntary funds, and a bonus of ten øre per rat was offered. A considerable number of rats were killed and handed in.

In 1907 came the first Act of Parliament, which was also based upon the bonus system. This Act stipulated that the municipalities should pay out a bonus of five to ten øre for every rat killed. There was some opposition to the Act, especially in the rural communities. In 1910 came the second Rat Act, which left it to the discretion of the various municipalities whether they should take steps or not and what method to use. This Act should have been revised in 1915, but the war prevented this being done, and the Act ceased to operate from 1915. There was therefore a suspension of the whole campaign until the enactment of the present Act, which came into force on May 6th, 1921. At the end of three years it is to be revised on principles based upon the experience gained.

According to this Act, the *seaports*, and *other towns with traffic harbours*, as well as the town of *Frederiksberg*, are *bound* to take measures for the extermination of rats. Other municipalities are, in this respect, left free. The municipalities may receive grants from the State to cover part of the expense.

The municipalities can choose what method they will use. The town councils (*Byraadene*) may order landlords to take reasonable steps to get rid of the rats. The landlords are allowed to form societies to do what is necessary. The landlords of

properties in neighbouring municipalities may be ordered to take similar steps on their properties¹.

The bonus system has been gradually superseded. Of about fifty towns outside Copenhagen which applied for State grants in 1922-23, only one used the bonus system exclusively. *Rat-killing substances* are very much used. The law provides that State grants will only be given if the rat-killing substance to be used has been approved by the Veterinary and Agricultural College.

Furthermore, substances which involve danger to human beings and domestic animals may be prohibited. In a Circular dated June 3rd, 1923, the Ministry of the Interior gives further information as to this.

The substances may be divided into two categories: (1) bacteria cultures, (2) chemical poisons.

Of the bacteria cultures, *ratin* only is used. This is a Danish preparation consisting of a pure cultivation of the *ratin* bacillus, a bacteria which belongs to the enteritis group. This produces an infectious and fatal disease in the rats; they first become ill, and die about ten days after they have eaten the *ratin*-infected food. The great advantage of this is that the rats do not become suspicious of the food laid out for them. The bacteria have never proved dangerous to human beings. Enquiries by the National Board of Health addressed to the medical officers in the towns where *ratin* has been used have never shown any connection between the laying-out of *ratin* and illness among people, nor has any increase been found in the number of cases of intestine infection.

The only drawback about *ratin* is that the degree of susceptibility of the rat — as of everything in regard to infectious diseases — varies in different rats and there are always some which are immune against infection.

I disregard the error made in using cultures which are not fresh and thus have lost their virulence, as this is, of course, avoidable.

Ratin cultures can be purchased in shops, but apart from this the factory undertakes the laying-down of the poison and the systematic extermination in towns. For several years this has been done in many of the boroughs.

To counteract the immunity in a certain percentage of the rats, an after-treatment is often used after the *ratin* has been put down, one or another form of poison being used three weeks later. For this, sea-onion (*scilla*) preparations are often used. Quite a number of the preparations approved by the Agricultural College are *scilla* preparations. The following substances are, according to the Home Office Circular, also of use: soluble barya salts; strychnine in solutions of not more than ten per cent, and phosphor paste with a phosphor content of not more than two per cent, both with the addition of colouring. Fluor natrium is not used, as rats do not like it.

In addition to the ordinary poisons, poisonous gases are used for killing rats on ships. In the port of Copenhagen a man is employed under the Quarantine Board for

¹ Regarding the details of this Act, I would refer to a French translation of it in the Bulletin de l'Office international d'Hygiène publique (Loi 245 du 6 Mai 1921 sur les mesures relatives à la destruction des rats 1921, p. 802); circulaire du Ministère de l'Intérieur aux Préfets en date du 10 juin 1921 concernant la Loi No. 245 du 6 Mai 1921 (1921, p. 803).

the destruction of rats on ships. The methods used in Copenhagen have also been adopted in the provincial ports, and I will therefore refer to the methods at Copenhagen. The Bulletin de l'Office international de l'Hygiène publique (Arrêté du 6 octobre 1919 sur la destruction des rats à bord des marines arrivant de l'étranger dans le port de Copenhague, 1922, p. 1157) gives the current regulations for the port of Copenhagen.

The following substances are used : (1) *ralin* bacteria culture ; (2) poisons : phosphor paste, and sea-onions in various forms, as, for example, *ralinin*. Poisonous gases : sulphurous acid and carbonic oxide. These are used in the following manner :

Sulphurous acid. The sulphur is burnt in iron pans of suitable size, the place to be treated being first completely closed off. One kilogramme of sulphur is used for 25 cubic metres. The place remains closed for six to eight hours before ventilation. As a rule the sulphur is lighted after working hours and the ventilation is done next morning.

Carbonic oxide. Burning of charcoal in pans as described above. For a hold of 2,000 cubic metres about 3 hectolitres of charcoal is used, divided over about ten pans. Plenty of spirit must be used in order to light the charcoal properly. Three hours is sufficient. The greatest caution must, of course, be used when ventilating. The dead rats are burnt.

Two large Danish steamship companies — The United Steamship Company and The East Asiatic Company — have the right to take their own measures on board their own ships. These companies own the great majority of the ships which come to Copenhagen. *Sulphurous acid* is used in a *Clayton apparatus* — an apparatus employed also in ships belonging to other companies.

Preventive or passive measures.

The Act of 1921 recommends and gives the municipal authorities the right to order measures to be taken to reduce or remove in as large an area as possible the means of existence of the rats by depriving them of food and shelter. In a country like Denmark it is hardly possible to carry this out completely, but much can be done by keeping refuse free from anything rich in food. The advantage of this system is that it makes it easier to get the rats to eat the poisoned bait.

In order to ensure the cleanliness of refuse, there are, in the Copenhagen sanitary regulations, certain provisions for keeping eatable refuse away from rats. Landlords and the tenants are ordered to keep yards, staircases, areas, etc. clean ; not to put pails with refuse in any accessible place ; refuse must only be placed in closed containers provided for the purpose ; sheds, attics and cellars, if they are not rat-proof, must not be used for the keeping of domestic animals or for the storing of things which can be eaten by rats or mice or used by them for nesting purposes. Doors and windows to uninhabited cellars and attics must be kept closed from dusk to sunrise unless they are wholly covered by close-meshed wire-netting.

The magistrates have further ordered a number of measures to secure property against rats. Uninhabited cellars and attics must be furnished with whole glass pane or with close-meshed wire-netting ; outer walls of a thickness of less than one brick which are not rat-proof must be covered with a galvanised close-meshed wire-netting in a belt of 10 centimetres above and 35 centimetres below the surface of the ground. Holes and cracks in walls and floors of cellars, yards, etc. must be closed with mortar. There are further detailed regulations.

I will now give an account of how the last rat campaign (1921-23) was conducted in Copenhagen.

Most of the landlords formed rat societies. These, which were approved by the magistracy, undertook the obligations of their members. Non-members had to do what was necessary themselves. Contractors were then engaged to do the work — simultaneous laying-down of poison in all properties ordered by the magistracy, and rat-proof measures. This was controlled by inspectors sent out by the contractors. If defects were found on the visit of the inspectors, endeavours were made to have them remedied by negotiating with the landlords. In cases where nothing was done after repeated applications, the inspector reported the matter to the Municipal Property Office or to the sanitary police if the infringement of the law came under their jurisdiction. Under the law, the municipality had the right to have steps taken at the expense of the owner concerned. For infringement of the sanitary regulations a fine could be imposed. On the whole, however, the attitude of the landlords was sympathetic and helpful, so that a report to the authorities was seldom necessary, and, as a matter of fact, the municipality has never made use of the right to have the work done at the expense of the owner.

This last-mentioned provision is generally regarded as unfortunate, and, therefore, in the Bill which is to be presented to Parliament in 1924, there is a proposal that it should be supplemented by a provision that a fine may be imposed if an owner does not undertake the work laid down.

The results of the rat campaign both in Copenhagen and the provinces have been extraordinarily good. It is very difficult, of course, to give any statistics. In Copenhagen, in order to gain an idea of the effect of the measures, the bonus system was introduced in July and August 1923. Otherwise the bonus system has been wholly abandoned in Copenhagen, but there was a payment of bonuses in July and August 1922. By reintroducing the same bonus in the corresponding two months it was possible to get some idea of the result. In 1922, 18,033 rats were caught ; in the same period of 1923 only 6,616 were caught.

Naturally, one cannot conclude from this that the number of rats has gone down to one-third, but it certainly indicates a considerable decline.

At any rate, there are only a few — presumably about 5 per cent — Copenhagen properties infested with rats. These are old properties which it would be too costly to render rat-proof.

The combined laying down of rat-killing substances and the rat-proofing of property has without doubt been of great importance in securing this satisfactory result, but the way in which it was done has also been of great importance. The contractors received a certain remuneration for keeping the rat plague down to a minimum. As a rule, they contracted to free at least 95 per cent of the properties in the municipality

from rats. The contractors therefore had a great interest in thoroughly eradicating the rats.

A town like Aalborg, which is both an old town and a seaport, thus keeps 95 per cent of the buildings free of rats. Poison is laid down twice a year, and if, in the intervening periods, rats are observed in a building, the fact is reported to the permanent rat-catchers, who do what is necessary. This has been practised for eight or ten years. In 1920, the expense incurred was 8,250 kroner for about 2,500 properties, or only between three and four kroner each per annum. Before the campaign began, about half of the properties were infested by rats.

In a similar manner, and with similar results, the other towns have proceeded, as, for instance, Randers, Viborg, Silkeborg, etc. In Randers the contractors have, with the sea-onion preparation Scillatin, even concluded a contract by which 98 per cent of the properties are guaranteed free of rats. In those towns where the contractors have guaranteed 95 per cent, the results have often been better than guaranteed.

There is every probability that the present Rat Act, which is an experiment, will be prolonged with a very few amendments. All the authorities have, when enquiries have been made, expressed themselves in favour of a prolongation without much alteration. There is hardly any doubt that with these methods the rat plague can be kept down to a minimum.

THE WORK OF A MEDICAL OFFICER OF HEALTH

BY DR. V. DJÆRUP,

County Medical Officer of Health.

THE MEDICAL OFFICER AS A STATE OFFICIAL

In Denmark, including the Faroe Islands, there are eighty-four District Medical Officers of Health (*Kredslæger*), and, of these, twenty-six are also County Medical Officers (*Amtslæger*) every county in the country having its Medical Officer of Health.

The district of a Medical Officer of Health is fixed by the Crown, and the officer himself is appointed by the same authority, from which it follows that he is a civil servant of the Crown and entitled to a pension on retirement ; the widow of a District Medical Officer receives a pension from the Treasury.

The District Medical Officer in Denmark is not a fully-paid official ; in other words, in fixing salaries, the fact that the District Medical Officer has the opportunity of augmenting his salary more or less through private practice is taken into consideration. There is, however, the restriction that, before he takes an appointment as physician to any institution in his district, he must have obtained the permission of the Ministry of Justice.

That the District Medical Officer is not exclusively a State official also appears from the fact that he has no actual public office ; he must himself provide suitable premises for his work, this being as a rule his own residence. He receives an allowance towards the cost of the upkeep of his office in proportion to the size of the district, and may therefore, to a certain extent, make use of paid assistance for the clerical work. His outlay for postage is also allowed.

He receives a daily allowance when more than two kilometres away from his residence on official work, and his travelling expenses are also paid.

THE DISTRICT MEDICAL OFFICER OF HEALTH AND THE OTHER FUNCTIONARIES IN THE MEDICAL SERVICE.

The District Medical Officer is the link between the County Medical Officer of Health and the other functionaries in the medical service of the district (doctors, dentists, apothecaries and midwives), and he is adviser to the legal and administrative authorities, who must confer with him in all cases in his district in which medical opinion seems to be required.

In his capacity as the intermediary between the medical practitioners and the other health authorities, the District Medical Officer receives, during the first days of

the week, the " Weekly List " (*Ugeliste*) — a statement of all the cases of epidemic sickness which have appeared in the practice of each doctor during the foregoing week. The District Medical Officer compiles a weekly list for the whole of his district and sends a copy to the County Medical Officer of Health. At the end of the month, the weekly lists are summarised in a monthly list, of which copies are sent to the National Board of Health and to the County Medical Officer of Health.

It is easy to see that the weekly report is, in reality, of only doubtful value in various respects. If, for instance, a practitioner has several cases of diphtheria, scarlet fever or other infectious diseases on a Sunday, which demand that the District Medical Officer assists immediately, it is most unsatisfactory that the District Medical Officer only receives notification of this on the Tuesday of the following week (that is to say, nine or ten days afterwards.) Fortunately, the collaboration between the practitioners and the District Medical Officer in Denmark is so good and reliable that it can always be taken for granted that the practitioner will immediately inform the District Medical Officer by telephone of any threatening situation, and the latter can then at once give orders that every case of this or that illness shall be notified to him forthwith on a special form.

The District Medical Officer sees that in every case where, in his opinion, it is necessary, public disinfection is carried out ; he can, after conferring with the Epidemic Committee (*Epidemikommisjonen*), give orders to persons whose occupation is judged to involve special danger of infection to keep away from that occupation until a medical certificate declares that the danger is over.

On the whole, the work of the District Medical Officer in the fighting of epidemics must be regarded as one of the most important of his duties, and its execution or omission may be of the greatest importance to the community. But in this — as throughout the whole of the Danish medical legislation — everything depends on loyal co-operation between the practitioners and the District Medical Officer.

From the vicar of the parish the District Medical Officer receives a monthly return of births and deaths, accompanied by all the death certificates received, and these, through the County Medical Officer, are forwarded to the medical statistics office of the National Board of Health. The monthly returns of births and deaths (including still-births) are summarised into an annual report and sent in together with the annual report regarding morbidity.

The District Medical Officer superintends to a certain extent the whole of the functionaries in the medical service in his district (doctors, dentists, apothecaries and midwives) ; he is in specially close touch with the latter. He distributes to them the registers and forms which they have to use, and thus has an opportunity of talking with them about their work ; he goes through the registers of the midwives every year, makes observations and confers with them on any difficult situations which arise. Furthermore, the District Medical Officer inspects the dwellings of midwives when permission is asked to have confinements at the midwife's house. Finally, he gives orders and instructions to the midwife in the event of puerperal fever or other infectious disease in her practice.

It is the duty of the District Medical Officer to ensure, and to use his personal influence to secure, that the practitioners send in the returns and reports demanded of them at the proper time, and he gives the necessary instructions to any new doctor

on coming to a practice in his district. The District Medical Officer is therefore the practitioner's counsellor, and it is for him to secure a good collaboration between the practitioner and the Medical Officer. It will therefore cause no surprise to learn that it is the duty of the District Medical Officer if, for example, an epidemic demands that he attends at the place of infection, to inform the practitioner and request him to attend too.

The District Medical Officer superintends the dentists, and he is charged, if a dentist is found guilty of some dishonourable action by the Courts, to procure a copy of the Court Register and send it to the National Board of Health.

A District Medical Officer, who is interested in his work and is also a skilful man, can exercise an enormous influence through the local health committee (*Sundhedskommissionen*) in the town in which he lives. He is *ex officio* member of it, and the greater the interest and energy he shows in the cases which come up for discussion there the greater will be his influence in all the sanitary affairs of the district.

And even if he should not be a member of the other local health committees within his district, he is entitled to be present at their meetings and may, even if he has no vote there, have great influence on the manner in which matters are treated.

As already mentioned, the District Medical Officer is a member of the local Epidemic Committee for the whole of his district and will, together with the Chief Constable, who is the chairman of the Commission, actually have the real fighting of epidemics in his own hands. In this connection he works in exact accordance with the prevailing legislation on epidemics, investigates the state of affairs on the spot when necessary, sends in material (blood, feces, spinal discharge, secretions from nose or throat, etc.) for examination at the State Serum Institute; he advises the sick and their families; he sees that the necessary information is given to the public in a proper manner and, generally speaking, as a member of the local Epidemic Committee and in collaboration with its other members — especially the Chief Constable (the chairman) — takes measures to prevent the infection extending, for which purpose he must also make provision for the necessary disinfection in the homes. The real disinfecting staff is under the authority of the District Medical Officer, and he is obliged to advise and assist it in every way.

SUPERVISION OF INSTITUTIONS, ETC., BY THE DISTRICT MEDICAL OFFICER.

The work of supervision with which the District Medical Officer is charged covers every institution in which several individuals of the same category are gathered together, such as charitable asylums, prisons, educational establishments, schools, infant asylums, infirmaries, sanatoriums, etc. It is the duty of the District Medical Officer to make himself acquainted with the arrangements and working of such institutions, and such defects as he may discover must be made the subject of complaints to the responsible management.

Furthermore, he must supervise bakeries, slaughter-houses, dairies, etc., when these institutions are subject to special laws, decrees or statutes; in Denmark, there is a separate Factory Inspection, and the intention is to secure collaboration between factory inspectors and District Medical Officers.

A very important branch of his work is the District Medical Officer's supervision of infirmaries, etc., the regulations on this point being very comprehensive. He supervises and keeps a careful record of all infirmaries, sanatoriums, clinics, health

resorts, maternity homes, nursing homes, convalescent homes, institutions for the treatment of nursing of the sick, lame, blind, deaf and dumb, weak-minded, epileptics, drug takers, drunkards, those having weak nerves, etc., and also of all homes where, as a means of livelihood, accommodation is provided for pregnant women, foster-children, the infirm or the sick of any kind whatever.

It will be understood that these regulations are not of much importance in a small district, as the number of such institutions in a district of this kind is very small indeed ; for the bigger districts, however, it means in reality a great amount of work. In supervising, the Medical Officer has to see that there is order and cleanliness everywhere, and that the normal number of inmates is not exceeded, but he has nothing to do with their health or general conditions.

HYGIENE.

The District Medical Officer must, *proprio motu*, watch over the state of health in his district. In the bigger districts, he must necessarily have confidence in the various specialists who are, in many respects, superior to him. For the small districts, however, and especially the rural districts, the position is different, for the responsibility for public cleanliness, drainage and scavenging in these districts often rests upon him. Where there is a health committee, his influence is often put into practice through that body. The same applies to burials, water supplies, control of victuals, etc. In this respect, it is of great importance in the small districts that the District Medical Officer should be watchful and familiar with the special questions which, in the big districts, as a rule are settled or, at any rate, controlled by specialists or other experts.

One very important regulation is to the effect that if the District Medical Officer, whose work in the ordinary course is that of an inspector and adviser, comes across a state of affairs which demands special sanitary measures in order to avoid danger to human life, he may *order* that these measures be taken, but he must immediately report the matter to the local authorities and to the National Board of Health.

It is only rarely that there will be need for the employment of this provision, but of course it is a good thing to have in reserve. As far as I can remember, I have myself only used it once, and that was in connection with the extermination of bugs with hydrocyanic acid, which caused the death of a child. I prohibited the use of this procedure entirely, and that prohibition continued in force until regulations for the hydrocyanic acid method were drawn up by the National Board of Health.

THE DISTRICT MEDICAL OFFICER ON THE LOCAL HEALTH COMMITTEE AND EPIDEMIC COMMISSION.

The District Medical Officer of Health is a member of the health committee in the town in which he lives, and he has, therefore, the opportunity to exercise great influence on the settlement of all hygienic questions which come within the scope of the health committee.

These are matters of a very heterogeneous nature — dwelling-house hygiene, food hygiene (milk control, meat control), school conditions, taverns, matters relating to factories (smoke, noise, smell, vibration, etc.), drainage, scavenging, etc., and it will be understood that the District Medical Officer must have everything at his finger-tips in order to be able to take part in the discussions.

As far as most of the District Medical Officers are concerned, he has several local health committees in his district, but he is only a member of the committee in whose district he lives. The other health committees in his district must inform him as to the time and place of the holding of their meetings, and he may, without the right to vote, attend these.

Furthermore, the District Medical Officer has, as has been briefly mentioned already, a lot of work in the Epidemic Commission, which functions in accordance with the Act of May 10th, 1915. Even if the Act does not include any special position for the District Medical Officer on the local epidemic committee, developments in practice have led to the District Medical Officer more or less independently deciding the matters which are of a purely medical nature and as to which only a medical man can judge, so that he thus acts on behalf of the whole of the local epidemic committee. He must endeavour to get the population to make the widest possible use of the right given them in the Epidemics Act to free infirmary treatment of the commonest serious infectious diseases, such as diphtheria, scarlet fever, typhoid fever, and paratyphoid fever, and he must see that the necessary isolation and disinfection is carried out.

He supervises the disinfecting staff; he directs it, and he must see, that the material is in order as well as control its efficiency.

He must keep a list of all persons notified as having been attacked by infectious lung or throat tuberculosis in his district and, in accordance with the provisions of the Tuberculosis Act, direct his attention to whether any tuberculous person lives under such conditions that infection is to be feared to any special degree, in which case he must report to the local health committee. He must see that the dwelling, bedding and clothing of a deceased tuberculous person are disinfected immediately after death, and also provide for disinfection when a tuberculous person changes residence.

VENEREAL DISEASES.

The fight against venereal disease is carried on in Denmark in accordance with the provisions of the Act of March 30th, 1906. In this respect, I would merely call to mind that everyone attacked by venereal disease is obliged to undergo treatment and is entitled to free treatment, regardless of his ability to pay the expense himself or not.

The District Medical Officer is obliged to treat those attacked by venereal disease (syphilis, gonorrhea, venereal sore) and to receive special payment for this treatment, charged for each consultation. In almost all small districts, and in some of the bigger districts, the District Medical Officer is the attending doctor, but in most of the big towns the treatment is left in the hands of specialists who act instead of the District Medical Officer, and thus also undertake the compulsory visitation, in accordance with this Act, in cases of persons suspected of being a medium for the transference of infection.

VACCINATION.

In Denmark, every child who reaches the age of seven years must be vaccinated. Vaccination is done twice annually in the towns and once annually in every rural township. It is done by the District Medical Officer free of charge. Re-vaccination is not compulsory in this country.

It will be understood that the District Medical Officer's vaccination work is considerable, and, in the districts which include rural townships, often far from his residence, public vaccination takes up a lot of time.

Although re-vaccination is not generally compulsory in this country, conscripts, when called up, have to be re-vaccinated, but this has nothing to do with the District Medical Officer. He has, however, to see that the doctors, nurses, maids, porters — in fact, all functionaries who come in contact with the patients in the infirmaries as well as the disinfecting staff — are re-vaccinated at suitable intervals.

THE COUNTY MEDICAL OFFICERS OF HEALTH.

Twenty-six of the District Medical Officers are also County Medical Officers in the county council district in which they live, and thus form a link between the National Board of Health and the District Medical Officers.

The County Medical Officer of Health is the expert adviser of the Lord-Lieutenant and the County Council and must, as such, make reports when requested by bodies to do so, and also give his opinion on the appointment of senior physicians in hospitals within his district, on the appointment of pupils in midwifery, on plans as to new infirmaries, school plans and plans of new cemeteries.

Whilst the County Medical Officer may on the whole be said to have a certain supervision over the persons, institutions and work over which the District Medical Officer carries on the actual supervision, there are other domains in which the work of the County Medical Officer is more direct, for instance, with regard to apothecaries, which he visits annually with a special inspector. He also holds the annual conferences of midwives, when he goes through the registers of the midwives, replies to questions, and gives any new information, whether theoretical, practical or legal, which concerns midwives. The County Medical Officer is not merely the adviser and counsellor of the midwives, but also their judge, as he can fine a midwife a fine of from two to 200 Kroner for neglect of duty.

Thus the County Medical Officer exercises a certain amount of supervision with the persons and the institutions, etc., which come under the supervision of the District Medical Officer, and his attention is especially directed towards all infirmaries and places where sick or infirm are accommodated as a means of livelihood, a supervision which necessarily means that the County Medical Officer, *qua* County Medical Officer, undertakes a number of journeys.

The combatting of epidemics rests in the first place on the medical practitioners and the District Medical Officers, which necessitates intimate collaboration between them. The County Medical Officer, however, also has an important and decisive role, for, as member of the county epidemic committee (*Overepidemikkommissionen*), he must see that the fight is conducted upon uniform principles and, should a very serious

epidemic disease appear in his district (cholera, smallpox, etc.), or should one of the common infectious diseases (typhus, scarlet fever, diphtheria, etc.) appear in an especially malignant form, the County Medical Officer must at once throw himself into the breach and personally lead the campaign.

Finally, the County Medical Officer must keep an exact register of the various institutions and persons within his district, and he must, from the District Medical Officer's and his own annual reports, prepare a County Medical Officer's annual report covering the whole of his district.

The County Medical Officer must be fully familiar with the record-keeping of the District Medical Officer, and once a year he must satisfy himself that all the official books of the District Medical Officer are kept in a proper manner and that they are posted up to date.

THE DISTRICT MEDICAL OFFICER AS MEDICAL ADVISER TO THE COURTS.

In Denmark, the District Medical Officer is not only the health authority, he is also the authorised medical adviser to the Courts (*Retslæge*) of the district. He must make the investigations and give opinions and make reports as required by the legal and administrative authorities.

Within his district he must undertake the legal inspection of bodies (with the Chief Constable) when death is due to suicide, accident, or in cases of persons found dead, or in cases which demand special attention on the part of the authorities. He must, together with a qualified dissector, make the legal post-mortem examinations in his district. Furthermore, he must see to the hygienic state of the district lock-ups, treat the prisoners and detained persons in them, and, more particularly, keep his eyes open for possible abnormal mental conditions among the prisoners.

He must report on the mental condition of a person if this is required by the police, or when there is a question of declaring a person to be incapable of managing his own affairs. He must examine motorists who are suspected of being intoxicated.

CONCLUDING REMARKS.

At his residence the District Medical Officer keeps the books and files of his office. Of books and registers are demanded :

1. Journal.
2. Copy-book.
3. Vaccination register.
4. List of institutions, etc., under his supervision.
5. Register of functionaries in the medical service.
6. Diary.
7. Account book.

The files include reports on patients with venereal disease and sick prisoners, all incoming letters and notices, etc., copies of midwives' registers, reports on cases of

tuberculosis and, in bound condition, the Law Gazette, medical reports, and the annual reports of the National Board of Health and the Medical Legal Council (*Retslægeraadet*).

The District Medical Officer must have fixed hours during which he can be seen at his office. Should he desire to be released from his official business for more than 48 hours, he must secure permission from the National Board of Health, and if the period is for more than four weeks, or if he intends to go abroad, he must secure permission from the Ministry of Justice.

The National Board of Health has arranged annual continuation courses in Copenhagen for medical officers, in which about fifteen officers take part. The course lasts two weeks and includes instruction in hygiene, epidemiology and microbiology—medical legislation, medical jurisprudence, mental ailments and venereal diseases.

THE SOCIAL AND SANITARY CONDITIONS OF A DANISH RURAL DISTRICT (LANDKOMMUNE): "VEERST-BÆKKE".

BY DR. BENDIX POULSEN,

County Medical Officer.

The unit of local government in Denmark is the municipality (*Kommune*). This may either be a large city (such as Copenhagen), a town (*Købstad*) or a country district. A village and the surrounding district come under the same local government. The municipalities possess extensive local authority ; they may impose taxes (municipal taxes) and also collect the State taxes.

The municipalities are free to organise their own sanitary services ; they also draw up their own sanitary regulations (*Sundhedsvedtægter*), which in a city are naturally different from those in the country, but these have to be approved by the Ministry (*Indenrigsministeriet* : Home Office) before they can become valid. A county (*Amt*) covers a large area and comprises towns, boroughs and rural districts. It is governed by a county council (*Amtsraad*) elected by the people, and a lord lieutenant (*Amtmand*) appointed by the King ; these attend to questions affecting the whole county, such as the upkeep of the main roads, dealing with epidemics, and in a great measure also the hospitals, etc. ; they, moreover, form an intermediary between the municipalities and the Ministries.

The Veerst-Bække district is situated in the County of Ribe (*Ribe Amt*) and has a population of 1,958 inhabitants. The local government is in the hands of a parish council consisting of nine members elected for four years, and of these only the cashier receives a small salary from the municipality. Last year an amount of about 90,000 kr. was collected as municipal taxes, three-fifths of which was from rents, the remaining two-fifths from income-tax.

Schools. There are five schools with six teachers and three lady teachers. The children frequent the schools six hours daily for about 125 days per annum. Every week they do gymnastics or other exercise for two hours. There are no school medical officers (see Sick Benefit Clubs).

Invalidity Benefit, etc. Eight persons in the district receive a pension (800 kr. per annum) according to the Invalidity Insurance Act of May 6th, 1921.

Poor-Law Administration. Seven persons in the district receive parish relief (*Fattighjælp*), but in addition to this the municipality has to support 21 persons

living outside Veerst-Bække ; three persons in Veerst-Bække receive relief from other districts. The actual expenses for parish relief amount to about 11,900 kr. per annum.

The district owns a workhouse (*Falliggaard*) affording accommodation for nine persons. Last year the beds were, in all, occupied 401 times, but some of the occupants came from other districts, which will therefore bear the expense.

The Public Assistance Fund (Hjælpekassen) last year paid 1,800 kr. to eight families.

Old-Age Pensions (Aldersrente). Eighty-three persons receive old-age pensions from 240 kr. to 900 kr. per annum, in addition to free medical attendance and medicine.

Sick Benefit Clubs. There are two sick benefit clubs, viz. : the Sick Benefit Club for the Parish of Veerst, with 337 members, and the Sick Benefit Club for the Parish of Bække, with 609 members. When under 15, children of members enjoy the same benefits as their parents, whereby practically 80 per cent of the inhabitants of the district have access to the benefits of the club.

The statement of accounts for 1920 for the Sick Benefit Club in the Parish of Bække shows the following figures, viz. :

	Kr.
<i>Receipts :</i>	
Subscription of members	9,200
Premium for invalidity insurance (collected by the club)....	2,800
Grant from the State	6,200
Grant from the Municipality	250
Other receipts	1,630
The funds of the Sick Benefit Club amount to	2,800
<i>Expenses :</i>	
Daily cash benefit	550
Ordinary medical attendance	7,400
Special medical attendance	186
Stay in hospital and sanatorium	2,025
Maternity benefit	440
Nurses	1,520
Administration.....	800
Re-insurance	350
Sundries	225

The Sick Benefit Club is managed by a board of nine elected at a general meeting, and of these only the cashier receives a small salary. The expenses of administration amount to only 1.31 kr. per annum per member.

Members who do not possess a vehicle and two horses are entitled to free transport for doctor and midwife and free transport to hospital at the expense of the municipality. Last year the total sum paid out was 2,300 kr.

Midwife. There is one midwife living in the district engaged by the county council and partly paid by it.

Foster-children (Plejebørn). In the district there are seven foster-children put out to nurse in families under the supervision of various authorities.

Sewage. Five years ago a sewage plan was drawn up for the town of Bække, which has about 200 inhabitants. It became necessary, however, to postpone the work on account of the war and high prices, and it could only be started this spring. The inhabitants themselves took the initiative in this plan and are themselves defraying the expenses of carrying out and maintaining the work; the expenses will be apportioned as rents on the properties that benefit by it. This is the usual procedure in the villages, for as a rule the people who live in the country do not show much inclination to contribute to a sewage system.

Meat Inspection. During the last five years a private meat inspection has been exercised in Bække over the two slaughterers of the district. About 150 large animals (horses and cattle) and about 500 small animals (pigs, calves and lambs) have been killed yearly. The inspection has been exercised by the veterinary surgeon, who has had the training necessary, in accordance with the regulations for the public inspection in State and municipality.

The stamps used have been approved and authorised by the chief veterinary surgeon, and are quadrangular, $6\frac{1}{2}$ centimetres long and 3 centimetres wide, and the inscription stands out in relief so that the stamp on the meat appears un-encircled showing the inscription: private meat inspection, 1st or 2nd class, and the name of the veterinary surgeon. For the work of inspection the veterinary surgeon receives a fee of 4 kr. per head of the large animals and 1 kr. per head of small ones.

This method of meat inspection has been arranged by private agreement between the veterinary surgeon and slaughterers, but apart from the moral obligation the slaughterer is in no other way bound to comply with the decision of the veterinary surgeon. This meat inspection is therefore only used in districts without health regulations, and meat controlled in this way cannot be imported into or sold in districts where such regulations are in force, nor can it be exported from the country.

Dairies. Most of the inhabitants of the district keep cows. In the village the milk is delivered from the co-operative dairy, and all skimmed milk and butter-milk is pasteurised. The co-operative dairy in Bække was established in 1887, and in the first year about 500,000 kilo. milk was dealt with. In the last financial year, from November 1st, 1922, to October 31st, 1923, the dairy received 3,503,830 kilo. milk from 205 co-operators possessing in all about 1,350 cows. 132,577 kilo. butter has been produced, which was sold for 579,358.75 kr., and 20,325 kilo. cheese, at a price of 52,089.37 kr. 19,000 kr. of cream, sweet milk, and skimmed milk was retailed. 81,104.70 kr. of skimmed milk and butter was sold to the dealers. The total working expenses of the dairy during this period amounted to about 57,000 kr.

There is a cattle control association in Bække, which was established in 1899. It comprises 25 members, with a total of 300 cows. The purpose of the association is, through strict control of the yield of the individual animals, to find which are the best beasts and, by breeding from them, to improve the stock. The association pays a salary to the appointed controlling official, who journeys from farm to farm determining the yield in quantity and fat percentage of the milk of the individual cows.

The County of Ribe (Ribe Amt), in which the Veerst-Bække district is situated, has a population of about 120,000.

The County Council (Amtsråd) consists of 11 members, elected by the people, and the *Amtmand*. The county hospitals are :

Ribe Hospital, with accommodation for 23 medical-surgical patients and 12 epidemic patients.

Varde Hospital, with accommodation for 24 medical patients, 38 surgical patients, and 24 epidemic patients.

Esbjerg Hospital, with accommodation for 99 medical-surgical patients, 25 epidemic patients, and 15 tuberculosis patients.

Spangsbjerg Sanatorium, with accommodation for 89 patients.

Grindsted Hospital, with accommodation for 10 medical-surgical patients and 22 epidemic patients.

Brørup Hospital, with accommodation for 23 medical-surgical patients and 12 epidemic patients.

Medical Officers (Embedslæger). The Chief Medical Officer is the County Medical Officer (*Amtslægen*), who is also District Medical Officer (*Kredslæge*) for about 34,000 persons.

The District Medical Officer (*Kredslægen*) in Varde, about 34,000 persons.

» » » » » » Esbjerg, about 30,000 persons.

» » » » » » Andst-Slaugs, medical district for about 21,000 persons.

The Veerst-Bække district is included in the latter medical district. The medical districts are 56 kilometres across from north to south and 17 kilometres from east to west.

In the medical district there are 12 municipalities, five of which have health regulations (*Sundhedsvedlægger*).

The local epidemic committee (*Epidemikommissionen*) consists of five members. In 1923, the following cases of sickness were reported :

Tuberculosis	6	cases
Diphtheria	77	»
Scarlet fever	34	»
Measles	203	»
Whooping-cough	86	»
Puerperal fever	2	»
Influenza	663	»
Typhoid fever (including paratyphoid)	2	»
Gonorrhœa	9	»

There were no cases of plague, yellow fever, cholera, dysentery, typhus, smallpox, leprosy, or cerebrospinal meningitis.

All cases of diphtheria, scarlet fever and enteric fever were treated in isolation hospitals.

One hundred and sixty-nine disinfections were carried out in houses.

In his capacity of medical adviser to the courts (*Retsslæge*) the District Medical Officer made 13 medico-legal post-mortems.

SCHOOL FOR CHILDREN OF WEAK SIGHT

BY AMMON ANDERSEN,

Teacher at the School for Children of Weak Sight.

Surgeon-Major Norrie, of the Army Medical Corps, was the first, in 1894, to advocate the idea of a school for children of weak sight. The cause did not at that time arouse much enthusiasm and the matter was dropped. It was taken up again in 1921 by certain oculists, led by Dr. K.K.K. Lundsgaard. The commune of Copenhagen consented to conduct an experiment, and on August 15th, 1922, it inaugurated two



THE SCHOOL FOR WEAK-SIGHTED CHILDREN IN COPENHAGEN (A LESSON).

special classes for children of weak sight. The children applying to join these classes were examined by Dr. Ejler Holm, the school oculist. Out of 90 children examined, 22 were considered suitable subjects for this school. Children of weak sight are considered to be those whose visual power varies between $\frac{5}{24}$ ths and $\frac{3}{60}$ ths for the eye the visual acuity of which is the better, the visual power of the normal eye being taken as the unit.

The principal cases diagnosed were as follows :

- 9 pupils cataract.
- 2 » buphthalmia.
- 2 » very pronounced hypermetropia.
- 3 » congenital syphilis, including two cases of parenchymatous keratitis.
- 1 » scrofula.
- 1 » atrophy of the optic nerve.
- 4 » congenital nystagmus.

The School for Children of Weak Sight constitutes an intermediary stage between the school for blind children and the normal or ordinary school. It receives pupils from both institutions and may, when their sight so requires, transfer pupils to one or the other establishment. Only children of normal mental capacity are received in the school. The two classes are installed at present in the municipal school in Faelledvej 12. The children come to school and return home by tramway. The school provides them with a free pass. Lessons begin every day at 9 a.m. and last for four or five hours a day — total 29 hours a week.

The School requires very large class-rooms. Each child has its place near the blackboard, on which it writes, calculates and draws in turn, using a desk for the tiring work at close quarters. The master's blackboard is transportable and can be placed as near to the pupils' seats as is desired. The angle of inclination is 30 degrees. The rooms are decorated throughout in soft tones of greygreen or grey.

Instruction is so organised as to spare and develop the sight while at the same time the pupils receive the necessary education. Frequent periods of oral instruction — during which the sight is given a rest — alternate with periods of closer study such as reading, writing, etc.

Generally ten to fifteen minutes an hour are devoted to close study — reading, writing, composition, arithmetic — and then the eyes are given a rest during the oral instruction until close study is again resumed. Oral teaching occupies the most important place in the curriculum. In addition to oral lessons in Danish and arithmetic, lessons are given in history, geography and natural history.

The explanations are illustrated by the master with chalk designs drawn on the blackboard. The maps, object lessons, designs, etc., are simple and typical, the lines being about 1 cm. thick.

On the proposal of Dr. A. Meisling who, like Dr. Ejler Holm, has given most valuable support to the school, experiments were carried out with magic lanterns, showing highly magnified pictures, with a view to facilitating teaching at a distance, and these experiments have given good results.

For teaching at a distance an epidiascopic apparatus is used, of a power sufficient to show pictures in full daylight or in a slightly darkened room. By means of the epidiascope any subject which it is desired to magnify can be shown, for instance, pictures, a page from a book, illustrated cards, fruits and flowers.

The master of the School draws all the pictures which are used, both the wall pictures and the magic-lantern slides. These are either outlined in white on a black background or are coloured pictures on diapositives and card-board. The principle adopted for the pictures is a simple, firm outline and firm surfaces showing restful colours.

L'ÉCOLE D'ENFANTS
À VUE FAIBLE DE COPENHAGUE
LOUPE

Pierre l'intelligent.

Pierre était un petit gaillard de 6 ans. Il croyait que personne ne pouvait rien faire aussi bien que lui. Aussi l'appelait-on pour cela « Pierre l'intelligent ».

Un jour sa mère lui donna une assiette et lui dit : « Peux-tu aller chez tante Catherine, ici à côté, et lui demander de me prêter un peu de poivre et de cannelle en poudre. Mais fais attention de ne pas mêler les deux choses ».

Certes, Pierre pouvait cela. Il courut tout de suite chez sa tante, et demanda d'abord le

poivre. Quand il l'eut, il demanda un peu de

cannelle. Pendant que la tante cherchait celle-ci, il retourna l'assiette pour que les deux choses ne fussent pas mêlées. Il ne remarqua pas que le poivre tombait sur le plancher. Alors la tante entra, apportant la cannelle. Elle n'avait pas bonne vue, aussi ne s'aperçut-elle pas qu'il avait retourné l'assiette. Pierre reçut la cannelle sur l'assiette, et rentra d'un bond chez sa mère.

« Tu es vraiment un garçon capable », lui dit-elle ; « mais où est le poivre ? »

Pierre retourna immédiatement l'assiette, et — voilà la cannelle par terre. Pas la moindre trace de poivre. Maintenant « Pierre l'intelligent » ressemblait presque à « Pierre le sot ». Sa mère rit de lui, et il ne fut pas envoyé une seconde fois chercher cannelle et poivre.

As regards optical aids to vision two children use a telescopic magnifying glass, one child uses telescopic glasses and the others use a flat cylindrical magnifying glass constructed by the author.

This magnifying glass magnifies clearly and steadily two and a-half to three times.

There is one child who uses red glasses, by which the power of its sight is almost doubled.

For the elementary teaching of writing and reading, sandpaper letters are employed and the sense of touch is used to familiarise the pupils with the form of the letters. Singing is given a prominent position, and the children sing from notes and by ear.

There is a course of rational gymnastics, which is of great importance for the muscular sense and for the power of orientation. A feeling for colour and form is developed in the children by drawing, modelling and handicraft. The design is drawn on the blackboard with white or coloured chalk and on paper in pencil or water-colour.

Instruction in arithmetic is given alternately, orally and in writing. The written arithmetical exercises are done on the blackboard and in heavily ruled copybooks.

Walks and excursions are regularly organised in order to familiarise the children with the town and the surrounding country.

The school considers that it is its duty to assist the pupils, after they have left school, in finding suitable employment, and it keeps in touch with them throughout their subsequent career in order to endeavour to render life as pleasant as possible for these members of society who are so much to be pitied.

OTHER SCHOOLS FOR CHILDREN WITH WEAK SIGHT

BY DR. EJLER HOLM.

Besides the Copenhagen Municipal School for Children with Weak Sight, we have in Denmark such schools attached to the State Institute for the Blind at Copenhagen and the preparatory school of that Institute at Refsnaes.

The pupils of these schools are children who have previously been educated and instructed as blind children, their poor sight having been detrimental to their education. They are, as a rule, children with very poor sight, and an endeavour is made to teach them to utilise to the best advantage the sight they have ; to develop their power of orientation, and to read and write. It is considered advantageous to educate them partly together with the blind, from whom they learn a certain amount of their education.

The causes of their weak sight are mainly congenital defects and abnormities. The school at Refsnaes is the oldest. The director of the preparatory school attaches great importance to their being educated as persons who have some sight, however small, and not as blind persons, whose prospects are extremely bad.

First steps have been taken at Aarhus to establish a municipal school for the weak-sighted.

THE HOSPITALS IN DENMARK.

BY DR. G. TRYDE.

As counties and municipalities have to defray the expenses of medical treatment and nursing to those who cannot afford to provide for themselves, these authorities have also to see that the hospital accommodation required is available. It was, however, the State which took the lead in the erection of hospitals in Denmark, where hardly any civil hospital, in the proper sense of the word, existed before 1757, in which year the State established the "Royal Frederick Hospital" in Copenhagen. This hospital was established by the State mainly for the purpose of training physicians, but of course, it also played a prominent part as a hospital, especially because it admitted patients from all parts of the country. It was planned to have accommodation for 300 patients, but even in 1772 it only had accommodation for 230. This hospital was originally intended for the reception of poor people, because they were more in need of hospital accommodation than others, and were more suitable for demonstrations, and also because the more well-to-do classes at that time, and even far later, disliked being treated in a hospital.

The Board of Guardians of Copenhagen had in 1750 established a free Maternity Hospital. In 1759 it was removed to and annexed to the "Royal Frederick Hospital", and in 1761 it was decided that it should also be used for training medical students in obstetrics. The Maternity Hospital was, however, again separated from the "Royal Frederick Hospital" in 1787 and made an independent State institution, but continued to be an educational establishment. It had at that time accommodation for 42 child-bearing women and four convalescents.

In 1771, Copenhagen had its second hospital established by the municipality, as the "Royal Frederick Hospital" was now closed to all persons except those who were in the service of His Majesty and in the Army, and the poor and other sick people were transferred to a municipal nursing home for the old and sick, which was established in 1769. The "Royal Frederick Hospital" was, it is true, reopened to ordinary sick people in 1773, but the nursing home, which later on was called the "Almindeligt Hospital", was retained as a hospital for patients provided for by the Board of Guardians, and towards the close of the century it had 182 beds. At the end of the nineteenth century, these two hospitals had about 412 beds, *i.e.*, one for every 202 individuals in Copenhagen, a considerable number of beds.

The real development of the hospitals in Copenhagen did not begin till 100 years later. The demand for treatment in hospitals increased more and more, even among those who were not without means, and the "Royal Frederick Hospital", which was also to admit patients from other parts of the country, could no longer satisfy this craving. It was even then somewhat antiquated in construction.

The great evolution in hospitals which took place in the greater towns all over the world during the latter 30 to 40 years of the past century occurred also in Copenhagen.

The rapid growth of the town during these years, and the predominant position which it held in the country, already a centre for scientific work, made Copenhagen take the lead in Denmark. The call for more hospitals gradually grew into a demand for special hospitals, and all hospitals were forced to be up to the standard of the time in construction and equipment.

Among the newly-erected hospitals of that time were the following :

- 1863 The Municipal Hospital of Copenhagen, which has now 1,020 beds.
- 1863 The Nursing Sisters' Institutions (*Diakonissestiftelsen*), which has now 90 beds.
- 1879 The "Blegdamshospital" for epidemic diseases, which has now 499 beds.
- 1879 Queen Louise's Children's Hospital, which has now 150 beds.
- 1875 The "Øresundshospital" for epidemic diseases, which has now 513 beds.
- 1875 St. Joseph's Hospital, which has now 380 beds.
- 1886 Rudolf Berge's Hospital for venereal diseases, which has now 185 beds.
- 1894 The County Hospital of Copenhagen, which has now 265 beds.
- 1896 Finsen's Phototherapeutic Institution, which has now 219 beds.
- 1903 Frederiksberg Hospital, which has now 650 beds.
- 1910 The State Hospital (*Rigshospitalet*) (formerly "Royal Frederick Hospital"), which has now 950 beds.
- 1913 Bispebjerg Hospital, which has now 700 beds.

By the end of 1921, there were in Copenhagen (and Fredericksberg) some 20 hospitals with 5,463 beds in all, *i.e.*, 3.2 for every 1,000 inhabitants. Of these beds, 4,084 were for internal and surgical diseases, *i.e.*, 6.1 for every 1,000 inhabitants, 697 for epidemic diseases, *i.e.*, 1 for every 1,000 inhabitants, 537 for skin and venereal diseases and 145 for mental diseases.

Patients suffering from epidemic diseases are, as a matter of course, gathered together in special hospitals, which is also the case with patients suffering from tuberculosis of the lungs.

A similar development took place outside Copenhagen. By the end of the eighteenth century, hospitals proper were only found in 12 places, *viz.*, on Sealand : at Hillerød, Esbønderup and Helsingør, on the island of Lolland at Nakskov, on the island of Funen at Odense, and in Jütland at Ribe, Kolding, Skanderborg, Aarhus, Horsens, Holstebro and Varde.

Some hospitals were originally established as small wards for the sick in connection with the municipal poor-houses. As they were intended to accommodate only the very poor, and as the equipment was not good, the diet plain and the nursing inefficient, they were of no use to people in general.

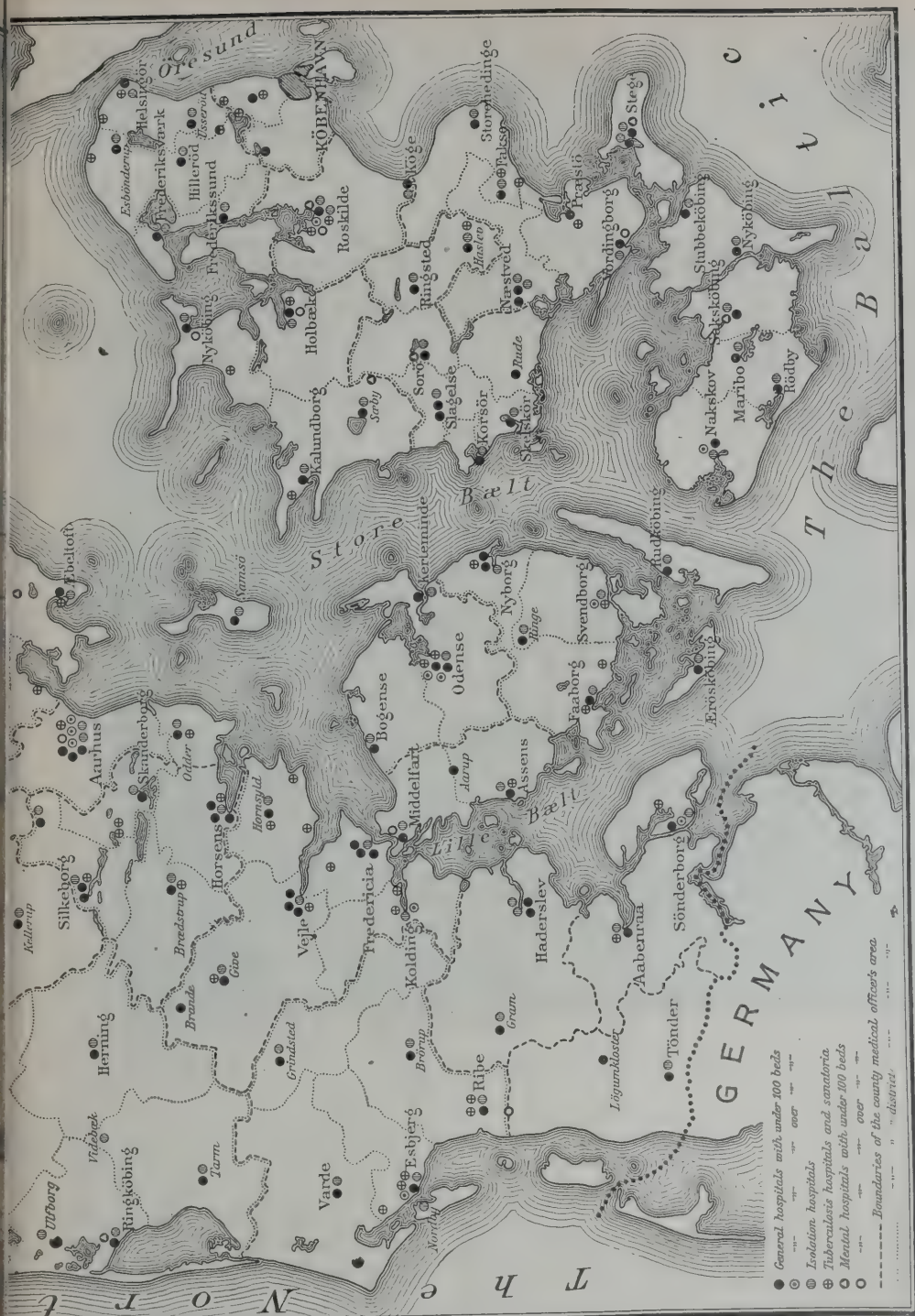
In other places, as for instance Nakskov, Holstebro, Kolding, Ribe, Varde and, later on, Lemvig and Ringkøbing, they were developed from the infirmaries established as a consequence of the campaign against venereal diseases, which began in 1774, and consisted of a few rooms either in the poor-houses or at other places. A few of them were, however, established as hospitals proper from the very beginning ; this was the case in Hillerød, Esbønderup, Aarhus, Helsingør and Odense.

These hospitals were gradually enlarged or altered so as to admit all patients requiring hospital treatment, so that paupers and venereal patients were received together with other patients. People on the whole, however, were not interested in the establishment of hospitals, as they did not realise the importance of them to any but poor and venereal patients. In 1806, therefore, the King issued an order in council — Denmark was at that time an absolute monarchy — by which each of the 17 counties was to have at least one or two hospitals, a few even three. In order to make it possible to carry through this beneficial regulation, considerable loans at a low rate of interest were granted the counties by the State.

More new hospitals were erected, but it was not till 50 years later that the object was attained. From that time on, the development extended from Copenhagen to the rural parts. The increasing number of physicians, their improved education, the rapid development of surgery after the introduction of antiseptics — Denmark was next to Great Britain in introducing antiseptics — created a constantly increasing demand for larger hospitals, and by the close of the nineteenth century all the towns, with a few exceptions, and several large villages, the places of trade on the Farø Islands, and the more important colonies in Greenland were provided with hospitals for patients suffering from ordinary internal and surgical diseases. The older of these hospitals were small and, according to our ideas, badly arranged. In 1857, a law was passed that each bed should have 600 cubic feet of air = 185 cubic metres, but it was not carried out everywhere. In 1870, only half the hospitals had this amount of air space, and a few had even less than 200 cubic feet = 61.8 cubic metres. The means of ventilation consisted generally of valves in chimneys, walls of corridors or outer walls. The closets were often in the rooms themselves with an outlet to the chimney; the bathing appliances were primitive, consisting as a rule only of hot slipper-baths; the diet was plain, and the nursing was almost exclusively done by untrained old women. It was not till the last 30 years of the past century that hospitals began to adopt modern technical installations : — central heating, supply of hot and cold water, forced ventilation, gas and later on electricity, and the old "Vaagekoner" (watching-women) were at the same time replaced by trained nurses.

In a country like Denmark, which is only small in extent, where matters are easily grasped, and the people well educated, progress soon penetrates through all parts of the country. But the people and its leaders do not feel inclined to make risky experiments. The development follows an even course and makes no sudden bounds; experience gained is used for further development. But if once progress is proved, endeavours will always be made to make it possible for the people to benefit from it, and when the example is given, the movement spreads easily from one part of the country to the other.

This has to a great extent been the case in hospitals. A new development has taken place during the past 40 years and the hospitals of this country have, generally speaking, attained a very high standard. Various circumstances have brought this about. Formerly nearly all surgical operations were referred to the hospitals of Copenhagen, or of some of the larger towns, but the rural parts of the country gradually displayed an inclination to emancipate themselves from Copenhagen and the greater towns respectively, which, together with the increasing number of physicians with an up-to-date education, resulted in the erection all over the country of hospitals with modern equipment, or in the addition of such equipment to hospitals of older date.



HOSPITALS OF DENMARK, COPENHAGEN EXCEPTED.

Every county is now provided with one or more great central hospitals with about 100 beds, besides several small subsidiary hospitals. Endeavours are made to equip the central hospitals so that anybody can receive medical treatment for any disease, and the number of hospitals where this is the case is constantly increasing. Endeavours



THE ISOLATION HOSPITAL AT HOLBAEK.

vours have recently been made to divide the large hospitals into medicinal and surgical departments, as the modern examination and treatment of internal diseases, with the strongly developed research work in laboratories, cannot be done in the homes. Hospitals accordingly play a great part in the treatment of all diseases, and admission to them is made easy as the payment, which is very moderate and which will hardly in any case be sufficient to cover the expenses, is reduced to one-half for

all patients who are subscribers to sick-benefit clubs. These cover more than half the population. This is of the greatest importance to the many homes which are unable to attend to the sick members of their own families owing to both parents being wage-earners, or to the income being too small to defray the nursing expenses.

One great reason for the increase in hospital accommodation is that the epidemic diseases regulations lay down that anybody suffering from one of these diseases is entitled to free treatment in a hospital. The municipalities have therefore had to establish special wards, or to annex special buildings to the existing hospitals. These epidemic hospitals, the plans for which are approved by the Department of Justice, are as a rule divided into two, three or four isolated wards, constructed so that they can be enlarged at the expense of the other wards and keep their isolation.

The campaign against tuberculosis of the lungs, and the subsidies paid by the State to the municipalities for the establishment and running of hospitals, have resulted in 31 hospitals having special buildings or wards to deal with the more advanced cases of tuberculosis of the lungs.

A typical Danish hospital consists of :

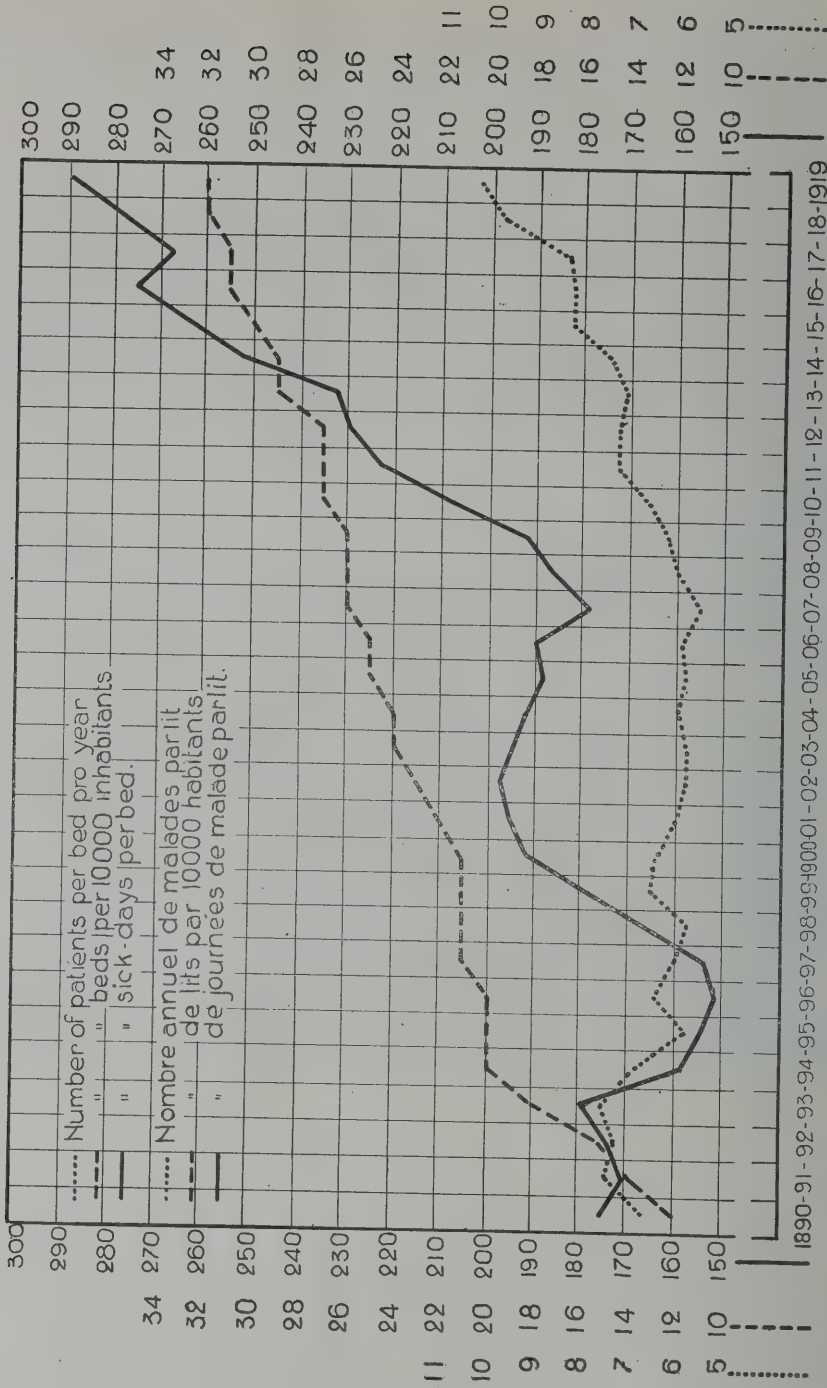
1. A principal ward for medicinal-surgical cases equipped with one to three operating-rooms, etc., with Röntgen (X-ray) and installation for arc-light baths, with hot baths and shower baths, etc., with apparatus for mechanical therapeutics, electrical therapeutics and with a massage division.
2. A separate building with its own staff for epidemics, each ward being provided with bath-room, lavatory, scullery and tea kitchen.
3. A hospital for tubercular diseases of the lungs in a separate building with a special staff.

There are no rules as to the arrangement of hospitals, but it has gradually become the practice for simple wards to hold 40-45 cubic metres of air, double wards about 35 cubic metres, and wards with more beds about 30 cubic metres. The average breadth of corridors is 2.25 to 2.50 metres. Sick-rooms must not have all windows facing north, nor be situated in the basement. As a rule, there is one w.c. for every 12, and one bath for every 16-20 patients.

The diet must be in conformity with a scale approved by the Home Office, which also draws up general regulations for the hospitals. The regulations for hospitals for tubercular diseases of the lungs are, however, approved by the Department of Justice.

At the end of 1921 there were 175 hospitals in Denmark, 20 of which were in Copenhagen. The hospitals outside Copenhagen provided 8,642 beds, 5,582 of which were for medicinal-surgical patients, *i.e.*, 2.0 per 1,000 inhabitants, and 2,393 for patients suffering from epidemic diseases, *i.e.*, 0.9 per 1,000 inhabitants. Of the remaining beds, 504 were intended for patients suffering from skin or venereal diseases, and 163 for temporary treatment of patients suffering from mental diseases. This number does not include the number of beds in the tubercular hospitals proper.

The hospitals are very largely used. In 1921, there were 133,185 admissions, the total number of sick-days being 4,324,542. The daily average number of patients was 12,001. The attached graphs show the increase in the number of beds and the number of cases in the hospitals during the past 30 years.



There is an increasing endeavour to improve the country hospitals. In many places hospital buildings are found with up-to-date equipment and able to provide a completely modern treatment.

In addition to the hospitals proper, there are the Welander Homes, named after Professor Welander, Stockholm. The Welander Homes are private institutions for children suffering from congenital syphilis. There are at present two homes, one in Copenhagen (established in 1916), with accommodation for 50 children, mainly under three years old ; older girls are, however, also admitted, and one at Elsinore (established in 1918) for about 25 boys from about four years of age; further, a home has been planned in South Jutland for about 20 children. The children are kept at the Welander Homes as long as their health requires it, but only as an exception after their 14th year. The proper specific treatment of congenital syphilis as a rule does not take place in the Welander Homes because the children are not accepted until after the treatment has been given and the children on recidivism are sent to a hospital for treatment.

The Welander Homes are supported partly by payment made for treatment, which is at present 4 Kr. 50 cere daily, and partly by public and private support and gifts. The stay in the homes is not considered as being in any way a form of poor relief.

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LEAGUE OF NATIONS

Health Organisation

HEALTH ORGANISATION IN DENMARK

Forty-five Conferences given in Denmark on the Occasion of the Interchange Study Tour organised for Medical Officers of Health from Twenty-one Countries by the Health Organisation of the League of Nations, June to July 1924.

Added in 1924

HEALTH DOCUMENTS

ISSUED BY THE

LEAGUE OF NATIONS

HEALTH ORGANISATION

MINUTES of the FIRST SESSION of the Provisional Health Committee, held at Geneva, August 25th-29th, 1921. (English and French texts.) (C. 400. M. 280 1921. III.).	3/6	\$ 0.70
MINUTES of the SECOND SESSION of the Provisional Health Committee, held at Paris, October 20th-22nd, 1921. (English and French texts.) (C. 471. M. 346. 1921. III.).	7/6	\$ 1.50
MINUTES of the THIRD SESSION of the Provisional Health Committee, held at Paris, May 11th-16th, 1922. (C. 366. M. 217. 1922. III.).	2/-	\$ 0.40
MINUTES of the FOURTH SESSION of the Provisional Health Committee, held at Geneva, August 14th-20th, 1922. (English and French texts.) (C. 555. M. 337. 1922. III.).	7/6	\$ 1.50
MINUTES of the FIFTH SESSION of the Provisional Health Committee, held at Geneva, January 8th-13th, 1923. (C. 27. M. 13. 1923. III.).	4/-	\$ 1.—
MINUTES of the SIXTH SESSION of the Provisional Health Committee, held at Paris, May 26th-June 6th, 1923. (C. 424. M. 187. 1923. III.).	5/-	\$ 1.20
REPORT on the Work of the SIXTH SESSION of the Provisional Health Committee (A. 28. 1923. III.).	2d.	\$ 0.05
MINUTES of the FIRST SESSION of the Health Committee, held at Geneva, February 11th-21st, 1924. (C. 10. M. 7. 1924. III.).	4/6	\$ 1.10
MINUTES of the SECOND SESSION of the Health Committee, held at Paris, May 7th-May 10th, 1924. (C. 213. M. 69. 1924. III.).	1/-	\$ 0.25
WORK of the HEALTH ORGANISATION of the League, including the Work of the Epidemic Commission : Report of the Second Committee to the Assembly. (A. 74. 1923. III.).	3d.	\$ 0.10
REPORTS on SEROLOGICAL INVESTIGATIONS presented to the Second International Conference on the Standardisation of Sera and Serological Tests, held at the Pasteur Institute in Paris in November 1922.	8/-	\$ 2.—
EPIDEMIC COMMISSION of the League of Nations : FIRST ANNUAL REPORT, 1921	4/-	\$ 0.80
SECOND ANNUAL REPORT, 1922. (English and French texts.) (C. 563. M. 421. 1922. III.).	3/-	\$ 0.60
REPORT on the INTERNATIONAL CONFERENCE ON THE STANDARDISATION OF SERA AND SEROLOGICAL TESTS, convened by the Health Committee of the League of Nations and held from December 12th-14th, 1921, at the British Ministry of Health, London. (English and French texts.) (C. 533. M. 378. 1921. III.).	1/6	\$ 0.30
REPORT on the SECOND INTERNATIONAL CONFERENCE ON SERA AND SEROLOGICAL TESTS, convened by the Health Committee of the League of Nations and held from November 20th-26th, 1922, at the Pasteur Institute, Paris.	1/-	\$ 0.25
REPORT on the EUROPEAN HEALTH CONFERENCE, held at Warsaw from March 20th-28th, 1922.	2/6	\$ 0.50
REPORT of the TECHNICAL CONFERENCE FOR CONSIDERATION OF CERTAIN METHODS OF BIOLOGICAL STANDARDISATION. Edinburgh, July 19th-21st, 1923.	2d.	\$ 0.05

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